LOWER MAINLAND EDITION Vol.3 No.9 SEPT 90

COMPUTER PAPER

WESTERN CANADA'S COMPUTER INFORMATION SOURCE

NEWS • FEATURES • REVIEWS • EVENTS

Back to School

Preparing for Computer Courses

FREE

DATABASE
GRAPHICS
EDUCATION
MUSIC
Hi Ho, Hi Ho, it's off to work we go
THE ANIMATOR'S DATA BUS

IBM & Tandy Redefine The [illegible]

A dozen things to know before BUYING SOFTWARE

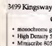
[illegible] Report

[illegible]

E-Mail as Easy as FAX?

Everex [illegible] BACKUP

COMPUTER ANIMATION



Friendlyware Computers

3499 Kingsway, Vancouver, BC V5R5L5 (604)437-3113

COMTEX386/SXPACKAGE

- monochrome graphics monitor
- High Density 5.25 Inch FDD
- Miniscribe 8051A 40MB hard disk drive (32K cache; 28ms)
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MS-DOS 4.01 $95

LOW PRICED 80386 COMPUTERS

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- AMI bios
- AT HDD/FDD IDE host adapter
- 8 expansion slots
- 200 watt power supply

Desktop Model	$1199
Small Foot Print	$1149
Mini Tower	$1249

Comtex386-25

- 80386DX-25 cpu, 8MHz/25 MHz
- AMI bios
- 1:1 interleave HDD/FDD controller
- 220 watt power supply

Desktop Model	$1899
Full Tower	$1995
Mini Tower	$1949

VERY HIGH SPEED COMPUTERS

The following two computers have cache memory

Comtex386-25Tower

- 80386DX-25 cpu, 25 MHz
- AMI bios
- Cache Controller with 64K cache
- 1:1 HDD interleave controller
- 220 watt power supply

Desktop Model	$2295
Full Tower	$2395

Comtex386-33Tower

- 80386DX-33 cpu, 33 MHz
- AMI bios
- Cache Controller with 64K cache
- 1:1 HDD interleave controller
- 4 Mbyte RAM
- 220 watt power supply

Desktop Model	$2795
Full Tower	$2895

All of the above COMTEX computers include 2 year limited parts and labour warranty,
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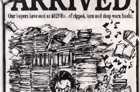

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Cardinal 2400 Hardware MNP5 ... [illegible]
[illegible] Cardinal 9600 V32 MNP5 ... [illegible]
USR 14.4 HST ... [illegible]
[illegible] ... [illegible]
T2500 9600 S/W 16 Line ... [illegible]

Video Cards

[illegible]

VGA Monitors

[illegible]

Miscellaneous

[illegible]

Motherboards

[illegible]

Co Pro's, Mice, etc.

[illegible]

Hard Drives (bare)

[illegible]

Hard Drive Controllers

[illegible]

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[illegible]

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[illegible]

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[illegible]

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Tseng Labs 4000 Series New 1MB [illegible]

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- [illegible]

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- Novell compatible
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- Monochrome Graphics card
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- Chicony Japanese Alps Enhanced Keyboard
- Monochrome Hercules graphics printer card
- 14" paper white Monochrome monitor
- 1:1 Interleave Voice Coil 40MB 28 ms W/32K Cache
- TWO YEAR WARRANTY

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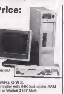

- Real Time Clock and Calendar
- 1MB of Fast 80ns RAM
- 1.2MB Floppy Drive
- Variable Speed from 2-25MHz, O W S.
- Intel 82385-33 Cache Controller with 64K fast cache RAM
- Socket for both 80387-25 or Weitek 3167 Math Co-processors
- Smart Tower Case with digital speed display
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- TWO YEAR WARRANTY

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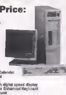

- Real Time Clock and Calendar
- 4MB of Fast 80ns RAM
- 1.2MB Floppy Drive
- Smart Tower Case with digital speed display
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- ATI VGA Card with mouse
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- ONE YEAR WARRANTY

SALES

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Samsung 14" Colour VGA	$489
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Datatrain DC 606 (800x600)	$650
NEC 3D	$1050

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Miniscribe IDE, 40MB/28ms	$488
Miniscribe IDE, 80MB/19ms	$958
Seagate 20MB/65ms	$330
Mitsubishi 42MB/24ms	$560
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Peripherals

Logitech ScanMan	$350
Generic VGA.	$295

Printers

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Raven 2417 24 pin	$465
Fujitsu DL3400 24 pin WC	$699
Roland LP 110 Laser	$2185
[illegible] 800 [illegible]	$1650
Cume Laser Printer	$1699

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Artec Hi-Res Mouse	$100

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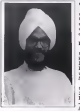
FROM THE EDITOR



Computer Courses

This month we have a full roster of new courses starting up listed in our Computer Calendar section Have a browse through and see if there is anything there for you. Check out our article on page 28 on how to get the best out of the courses that you do take.

Home Computers

Anytime IBM does anything in this industry, they do it in a big way Home computers are the hot item this month with the announcement of IBM's new PS/1 line of computers. We recruited Lynne Henderson, a computer novice, to give us the inside scoop on a review unit from IBM. See her story on page 32 for the details

One good thing about the new IBM PS/1, is that they will reportedly be including a copy of *Suzy*, the new online information service from Burnaby's Stratford Software (formerly Bedford — the folks that brought you Bedford Integrated Accounting). This system looks very hot, and has the potential to be *the* way Canadians with computers across the country communicate with each other It has a very simple "point and shoot" approach which is much simpler to use than the standard command line approach that competing services offer. The software needed to run *Suzy* is also available in most computer stores for $29.95 and $12 per hour access time.

This Month's Cover

This month's cover is reasonably leading edge The photograph, by Ward Sturrat of V Group Designs, was scanned with a color scanner down at WYSIWIG Graphics, transported back to us on a removable 44-megabyte hard drive (a Transit drive from Adam Peripherals) a couple of shadows were digitally corrected by Graeme Bennett (our in-house graphics Wiz) using Adobe PhotoShop, then it was combined together in Quark Xpress 2 12 page layout program with Adobe Illustrator graphics added in (the Computer Animation cartoon is by Larry DeFehr at Artbase). The file was then sent back to WYSIWIG, again on the removable and printed directly to film It is nice to be high-tech, but it can also saves money To do this type of cover the traditional route would have been approximately double the price Desktop color separations are not necessarily the answer for all publications, but for newsprint, they offer some interesting advantages.

I thought I could get away with it — inexpensive child labor I was showing the mock-up of this month's cover to Bud Lilam, owner of Minitronics Computers, he was one of the first people outside of our office to see the cover and he had never met my family His first question was: "is that your daughter?" I thought I could get away with no credits — now she will probably want royalty payments

Enjoy the issue.

Kirtan Singh-Khalsa

Kirtan Singh Khalsa
Publisher/Editor

MASTHEAD

Publisher/Editor
Kirtan Singh Khalsa
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Assistent Editor Graeme Bennett
Contributing Writers
Graeme Bennett, Larry DeFehr, Roedy Green, Cathalynn Labonté-Smith, Daniel Wenger, Robert Tarrant Gordon Simmonds, Stephen Smith Robert P Ford.
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Office Manager Dharm Kaur Khalsa
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Cover Photo V Group Designs, Digital retouching and layout Graeme Bennett, Cartoon by Larry DeFehr
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November 1990	October 31	Presentation Graphics	October 17	October 18
December 1990	November 30	Christmas Issue	November 16	November 20
January 1991	December 28	Speed, Power & Connectivity	December 12	December 14

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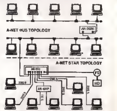

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LETTERS TO THE EDITOR

Norton Rules?

I must take exception to RoedyGreen's choice of Norton Backup as the best backup program. With Norton, it took close to an hour and 7" diskettes to backup my drive. When I went to restore one directory it cross-linked two files. When I installed the program, it choked on my 386 and asked me to slow it down. What scares me most about Norton is its proprietary format that prevents recovery utilities from working.

I went back to my other backup program which doesn't mind my 386 and is easier to install. It took 26 minutes and only 54 diskettes. The user interface is just fine, thank you. It is clear and presents all the relevant information on

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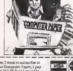

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screen There is even a detailed backup log I can refer to later if I want. Oh yes, the program? It's FastBack Plus 2 10, the most popular program on the market.
Barry Macdonald

Roedy responds

If it takes 54 floppies to back up your hard disk, you should buy a mag tape. You have suffered long enough. However, to answer your criticisms.

When I did my timings, I checked them three times. Here are some possible reasons why your results and mine were so different:

1 Did you have any TSR's or unusual device drivers running? Backups work best in a spartan environment with nothing to interfere or slow things down.

2. Did you allow for the fact that proprietary formats take forever the FIRST time you backup, and only run at full tilt on subsequent backups to the same floppies?

3 Did you also try the Norton Backup in standard DOS format? It gives you the option of standard and proprietary.

4 Do you have an unusual BIOS, DOS or hard disk controller? If you do, the more mature FastBack Plus is a good choice because its authors have had time to learn about the less common hardware.

5 It sounds as though you had Norton compression turned off. I tested each of the packages with the option "compress for speed" turned on.

6. It also sounds as though you may have had one of the time-consuming Norton high verification levels turned on. I did my tests with all verification off.

It is possible Norton Backup 1.1 did corrupt your hard disk. Because Norton is so new, in the article, I warned people to test it especially carefully before relying on it. However, it is also possible your FAT could have been damaged before Norton even went near it, and restoring files just brought existing trouble to the surface. I have not been able to get Norton Backup to corrupt any of my disks. Please report the details to the authors.

Finally, the distributed error correction redundancy method used in the Norton proprietary format is safer than using plain DOS format and recovery with traditional tools In a sense, everything is recorded twice, so that if one part is damaged, it can be reconstructed from the undamaged parts. If you want to be really safe, use the redundant distributed error correction and DOS format.

More Backup

In his article on backup software in the July issue, Roedy Green says "Norton gives you a choice: proprietary format for extra speed, or conventional DOS format for extra safety PC Fullbak Plus always uses proprietary format. The others always use DOS format." Apparently he did not notice that PC Tools also provides for the optional use of a proprietary format. I would be curious to know how PC Tools would fare in the speed comparison when used with its "Standard Format" option turned off
Sincerely, Andrew Shaw.

Roedy responds:

Oops! I did indeed fail to notice the "standard format" option in PC Tools that you turn off to turn on the proprietary format. I just benchmarked PC Tools in proprietary format mode. That moved it into second place a hair behind front-runner Norton. If Norton rates 100, then PC Tools rates 96.

The Computer Paper Sexist?

I really enjoy *The Computer Paper* — there are many useful things (information) in it. However, I was disappointed in the July 1990 cover. The picture of the woman crying, saying "backing up is hard to do" only served to reinforce the stereotype that all women are computer illiterate. Again, the article on backing up was extremely informative, but I think you could have chosen a better (and less sexist) cover layout (the pink didn't help either). It is not just the female secretaries who lose all their data because they don't know how to or have forgotten to back up.

And having the title of the article "Computers for the complete beginner" right next to the woman on the cover suggested that women are "complete beginners" when it comes to computers. Not that the article itself was biased in this way (and I think it was a good article to include in the paper) but hopefully you will be more conscious of your covers, and of sexist stereotypes, in future editions. Thank you.
Suzanne Reimer
E-Mail received from Mind Link!

Point taken — this was not an intentional combination of titles. And we had no desire to offend or to perpetrate stereotypes of women with the image used.

WordPerfect

I am writing to thank you for printing information from our COMDEX Spring press conference in your July issue. We get very little coverage in the Canadian market and we are appreciative of your efforts to let your readers know about our products.
Kathryn Pond-Sargent
Corporate Communications
WordPerfect Corp.

Windows 3.0 Article

I have just read an article on installing Windows 3 by Roedy Green in your August issue with considerable interest. His asides and insights are, as usual, thought provoking and in many cases very helpful

When I came to the section on 'Variable AUTOEXEC.BAT' files it seemed like quite familiar territory. In order to run Ventura in expanded memory my system needs QEMM 386 on board Windows can't tolerate it. The solution was a shareware program (available for free from the CD-ROM disk in the main branch of the Vancouver Public Library System) called RECONFIG.

Reconfig allows one to maintain a miniature database of up to 100 different Config sys and associated Autoexec.bat files. This can be added to, deleted from, created, edited, selected, etc. from a very usable set of pull-down menus. Once you have picked the combination required, the program modifies your files and asks if you want to reboot the system. Very smooth.

Perhaps Roedy Green's offer of a 'Variable Autoexec disk' is a minor example of 're-invention of the wheel'.
David A.N. Cull

Roedy responds:

Just as the wheel was invented in many different places at many different times on the planet, many people have worked on solutions to the variable AUTOEXEC.BAT problem. My solution is quite old. I have been using variations on it commercially since 1983

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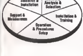
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Our firm has sent several faxes since first purchasing your product (release 1.30b) to which, as of this date, we have not received any acknowledgement. Although we understand the software development process full well, a courtesy fax response indicating whether or not the problem is being worked on, and when an update resolving the problem could be expected, would surely help.

A phone call from the local representative was no help. At first he phoned to say he didn't understand the Copy Fax we sent him. After explaining the problem, indicated he had Release 2.17 which we could pick up, but didn't know if release 2.17 solved this particular problem. No offer by the local representative to find out the status of this problem.

Alcor Systems Ltd.
Gerrit Wansleeben

Frecom responds:

It always hurts when a customer has a problem with FAX96. The problem appears to manifest itself when using broadcast lists of several hundred names though we have yet to be able to reproduce it in our labs — we're still trying.

We have one other customer with the problem as well. This is two customers out of over 10,000, less than 0.02 per cent but not acceptable. Our objective is absolutely airtight software.

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The experience with FAX96 has taught us the enormous difficulty of being compatible with every PC, every phone system, every fax machine and every application that customers devise. I often wonder how other developers of fax boards, who ship volumes that are 10 per cent of Frecom's, ever get to solving this endless array of combinations.

We have been working to solve Mr Wansleeben's problem and have told him so, but, by virtue of his letter to you he clearly has run out of patience.

When starting Frecom we decided that we would institute a money back-guarantee for customers for whom FAX96 does not meet their needs. We have always returned customers' money when we have not been able to fix problems quickly enough.

We hope that Mr. Wansleeben can hold out for the fix to this problem, but if not, we understand and hope that he finds a good substitute solution to his requirements.

Paul Masters
President
Frecom Communications

PC Tools

I read Roedy Green's excellent article on backup software in the July 90 edition of *The Computer Paper*. One thing irked me, however, about his discussion of the PC Tools 6.0 backup. He states: "The program requires a color screen to work properly. In monochrome, you *must* have your contrast adjusted just right or you cannot tell which directories are selected and which are not."

While this is technically true, any user of a monochrome monitor and certainly any dealer who sells someone a monochrome system should have adjusted his/her monitor properly beforehand. The three color levels (normal, intense, and dark grey) that are available with the MDA are one of the few saving graces of having a monochrome monitor. Many other programs, including PFS First Choice, work much better when the screen is properly adjusted.

Otherwise, I found the article well written and informative. However, considering the fact that PC Tools 6.0 not only has features of practically all utility features combined, but also a very serviceable and user-friendly backup program, and costs less than the separate Norton Backup program, perhaps it ought to have been reviewed more favorably.

Jeremy Reimer
E-Mail received from Mind Link!

Roedy responds.

In my article I said "In monochrome, you must have your contrast adjusted just right or you cannot tell which directories are selected for backup and which are not."

Many computer users turn the contrast knob to turn up the brightness in a word processing program, then wonder why they cannot make sense of the screen displays in programs like PC Tools. If PC Tools simply added a check mark beside the directories to be backed up, the way their competitors do, it would solve the problem very neatly.

You are quite right, though. I am biased against PC Tools 6.0. Central Point was unusually careless with bugs in earlier versions and I and many others are not about to forgive them quickly. To be fair, version 6.0 seems pretty clean.

PC Tools backup comes bundled with the PC Tools utilities, so you can get the whole shebang for about $100 whereas the combined Norton Advanced Utilities and the Norton Backup would cost you about twice as much.

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Mary Kay Herrmann

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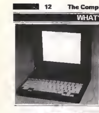

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Intra LT–Power and Price

Intra LT-386SX Computing power is coming in increasingly small packages. The Intra 386SX comes with a 16 MHz, 0 wait state 80386 SX microprocessor, 2 megabytes of RAM, a 40 megabyte hard drive, and a 16-gray scale 640 X 480 LCD VGA display. Pricing starts at $4950 and is available from Omninet Computers. Dealers inquiries are welcomed 604/872-1136

Vision Does Windows

VANCOUVER, B.C.—Vision Presentations Inc., has announced that they now can produce color 35 mm slides and overheads from MS-PowerPoint for Windows 3.0. Vision expects demand for this service will become very popular as the support for Windows 3.0 grows. According to Evans Data Research Corp., estimated sales of business graphic software will grow faster than any other software category. Vision is an affiliate of the world's largest computer graphic organization, Genigraphics Corporation. Contact: Ron Jacklin, Vision Presentations Inc., 604/682-4686

North Shore Continuing Education Offers Full Schedule of Computer Training

The proliferation of new and updated software on the market today can be daunting. Word processing, spreadsheet and accounting programs offer a sophisticated range of bells and whistles that seemed unimaginable only two or three years ago. Many lack the time or patience to wade through a five-pound software manual.

One option worth exploring is the wide variety of courses offered through North Shore Continuing Education. When NSCE entered the' computer training market six years ago, it quickly became one of the most progressive and well-equipped public facilities in the Lower Mainland. NSCE uses state-of-the-art technology — all three IBM labs contain only 286 or 386 computers complete with mice, 2 megabytes of RAM and at least a 60 meg hard drive as standard equipment. There are also several Mac labs available to NSCE through its affiliation with high schools in North and West Vancouver.

All instructors at NSCE are also private consultants or tutors in the computer field. They have the in-depth knowledge that comes from using programs on a daily basis. So that you can have a look at the computer labs and courses offered, and meet the instructors NSCE is having an open house on September 11th between 7 and 10 pm at Lucas Centre, 2132 Hamilton in North Vancouver. Visitors are invited to tour the labs and take advantage of ongoing lectures on current software. For details call 986-8888 or 980-2713.

Standard International Honored by SCO

Standard International Systems (SIS), SCO's Authorized Education Center with centers in Edmonton and Calgary, has been recognized for "Highest Achievement in an Authorized Education Centre" for 1989, the first year that the SCO Authorized Education Center Program has been in operation.

William Berry, president and SCO Authorized Instructor for Standard International Systems, has trained more users and resellers of SCO products than any Authorized Instructor in North America. He gets consistently high marks from his SCO training customers in the Prairie Region. Contact: Standard International Systems in Calgary 403/266-0695 and in Edmonton, 403/428-0338.

Dataport Opens Richmond Warehouse

A Canadian wholesaler of computer supplies has opened a warehouse in Richmond to accommodate their western customers more efficiently. Dataport stocks most major OEM name-brand products. Dataport is also introducing what they feel is an industry first—the Instant Rebate Chequebook. In conjunction with leading manufacturers, Dataport is offering resellers Instant Rebate Cheques before the order is placed. Each cheque is for a specific dollar value per manufacturer product line, deductible at the time of invoice payment to Dataport. This program is in effect from September 1st through November 30th 1990. Contact: Dataport 604/688-2335

Recycled Non-Chlorine Bleached Computer Paper

A Vancouver company specializing in recycled and unbleached office and printing paper is now offering continuous-feed, fine-edge computer paper made from 100% recycled post-consumer newsprint. Because it is made from 100% recycled fibre and is not bleached with chlorine, this is one of the most environmentally sensitive papers available today.

According to Paper Choice, although the recycled sheet is softer and requires a little more care in tearing, these papers do perform to the same standards as non-recycled products. It is available in all standard sizes and formats and is reasonably priced. Contact: Paper Choice 303 E. 6th Ave. Vancouver 604/873-5700.

New Newsletter Aims to Demystify Desktop Publishing

A free newsletter aimed at making desktop publishing comprehensible to executives was launched today by Vancouver-based Resolutions Enterprises. According to Resolutions staff, the gap between desktop publishing's promises and actual fulfillments called for an unbiased publication which explains DTP concepts, methods and product to corporate users in plain English. The newsletter will be published quarterly, and will attempt to bridge the knowledge gap by reviewing the latest software, outlining optimal system configurations and giving tips about everyday desktop publishing use. Contact: Resolutions 604/683-1599

Database Details Canadians' $334-Billion Annual Spending Spree

A software developer specializing in desktop demographics has released a PC database that tells how Canadians spend their money and what they own. "Previously this information was only available for provinces or large metropolitan areas," says Wilson Baker, President of Tetrad Computer Applications Limited. "Now, by combining Statistics Canada's Surveys of Family Expenditures and Household Equipment with detailed census data, we are able to derive family spending and consumer goods ownership patterns for the 42,584 enumeration areas in Canada." Tetrad's FAMEX database provides a new source of marketing data for users of Tetrad's desktop demographics software. Define any area in Canada and PCensus describes how the money is spent. PSearch software finds where Canadians live who spend or own "the most" in over 140 categories. Contact: Mari-Lou Shoulak, Product Specialist, Tetrad Computer Applications Limited 1-800-663-1334.

First Advertising Show To Be Offered In Vancouver

With a slowing economy, many businesses are looking for ways to maximize their advertising investment. AdVantage, a new advertising show hopes to offer small and mid sized companies a chance to expand their knowledge of advertising. On September 6 & 7, AdVantage, the first Western Canada Advertising

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Ventura Scoop

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Show, will bring the buyers and sellers of advertising together on common ground at the Vancouver Hyatt Regency Hotel. The show is sponsored by an ad agency and Pacific Press.

A series of seminars to help sales and marketing people become better advertisers will be offered. In addition, the exhibit floor will become a full-service Advertiser's Warehouse where a broad range of companies will display the divers advertising options they offer.

To top things off, AdVantage will also feature the premiere screening of the 1989 New York Festivals and the 12990 CLIOS–two of the world's largest and most prestigious advertising awards. *The Computer Paper* will have a booth at the Advertiser's Warehouse. For more information, contact Joe Makrovitch, Campbell, Mithun, Esty Ltd., 604/876-0064.

CADKEY Training Comes To B.C.

The Pacific Marine Training Institute has recently acquired Training Centre Status for CADKEY, the first in B.C.

CADKEY is a 3-dimensional Computer Aided Design and Drafting (CADD) program that is aimed primarily at meeting the needs of the mechanical engineering market. It is versatile enough to be used in civil and electrical drafting and has even been used in the design of knitting patterns and stage production layouts.

CADKEY was voted Editor's Choice in March by PC Magazine. "No other package offers the blend of 2-D functionality, 3-D versatility and ease of use that CADKEY does," the magazine said. Contact: Pacific Marine Training Institute, 265 West Esplanade, North Vancouver 604/985-0622.

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NEWSBYTES

AMIGA

More Red Ink

COMMODORE INTERNATIONAL reports a loss of U.S.$8.5 million for the fourth quarter which ended June 30, 1990 on revenues of U.S.$198 million. For the whole year, however, the company reports earnings of U.S.$3.5 million on revenues of U.S.$887 million. Irving Gould, chairman, said, "Sales of Amiga computers increased by 40 percent during the fourth quarter while unit sales of C64 and PC XT systems declined."

Commodore USA Throws In Monitor With Amiga Purchase

WEST CHESTER, PENNSYLVANIA, AUG 16 (NB) — Commodore will give away a free 1084S color monitor, list U.S.$399, with every purchase of a new Commodore Amiga 2000HD or Amiga 2500/30 computer through September 29.

Commodore Business Machines, which is recovering from a recent quarterly loss, is taking a stab at the small-business market with its latest promotion.

Commodore Director of Business Markets David Archambault, says, "While the Amiga 3000, our newest and most powerful model, is ideal for advanced applications, the popular and cost-effective 2000 series models are well suited for the small-business/work-at home audience as well as the first time buyer."

The multitasking Amiga line includes the Commodore Amiga 500, the Commodore Amiga 2000, two enhanced products — the Commodore Amiga 2000HD and the Commodore Amiga 2500/30 — and the Commodore Amiga 3000.

APPLE

Apple In Congress On VDT Safety

SAN FRANCISCO, CALIFORNIA, JUL 27 (NB) — Apple Computer Vice President, Advanced Technology, Dr. David Nagel, testified Wednesday in Washington in favor of bills which call for additional funding for research on ELF (extremely low frequency) radiation, and said that Apple is prepared to donate research money. The testimony comes as Apple has been criticized for radiation levels in its monitors.

House Bill HR4801, submitted by Congressman Pallone of New Jersey, and the amendment to House Bill HR4873, submitted by Congressman George Brown, were the objects of testimony before the Subcommittee on Natural Resources, Agriculture, Research and Environment in the House of Representatives.

Dr. Nagel stated Apple's position calling for comprehensive research on the effects of ELF and VLF (very low frequency) emissions, and called for the computer industry to adopt protocols for the testing and measurement of VLF and ELF. He also called for a consortium approach to conducting research, in which government, academia, and industry collaborate.

Nagel, an Apple vice president, noted the "recent indications in electromagnetic science — prompting observers that more attention should be given to the issue." He said the National Academies of Science and Engineering is uniquely positioned to call on preeminent scientific and engineering resources to conduct a review of the entire corpus of reserach concerning the problem.

On balance, however, Dr Nagel stated Apple's position that the body of scientific evidence gathered to date supports the belief that VDT's are safe for people using them.

Apple Computer was featured in an article about the heath hazards of VDT's in the July edition of *Macworld* magazine. The report stated that the AppleColor High Resolution RGB Monitor had the highest emissions of ten monitors tested. The report suggested that users keep this and all monitors at arm's length from their bodies in order to lower their radiation exposure. The magazine plans to have follow-up reports in its November and December issues.

ATARI

Computer Friends Link Hand-Held Atari To Macintosh and PC

BOSTON, MASSACHUSETTS, AUG 13 (NB) — Computer Friends, Inc, at MacWorld Expo/Boston, announced the availability of the Ultimate Portable for the Mac, a configuration which links the 1-pound Atari Portfolio hand-held computer to a Macintosh. The package includes the Message Mover software which runs on both the hand-held unit and the Macintosh and provides intelligent file transfer between the two systems.

The Ultimate Portable for the Mac package contains the Atari Portfolio with 128k memory, an AC Power Supply, the Atari Serial Interface, Message Mover Software for the Portfolio, Message Mover Software for the Macintosh and a cable to connect the Macintosh and the Portfolio. The suggested retail price for this configuration is U.S.$599. An optional 2400bps (bits/second) Hayes-compatible modem, listing for U.S.$189, allows the Portfolio, using the same Message Mover Software, to access remote telecommunications systems and transfer information.

Computer Friends' Calvin Smith told Newsbytes that although there is a similar configuration, also listing for U.S.$599, for a Portfolio/MS-DOS connection, the Macintosh connection is more elegant.

"It's not really to do with our product. It's rather that the user interface on the Macintosh lends itself to more transparent connections. On the PC side, we transfer text files to be loaded as ASCII into any word processor that supports text file input. On the Mac side, text can be moved directly into MS-Word format-

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Newsbytes is written by Newsbytes contributing editors: Wendy Woods, Janet Endrijonas, Dana Blankenhorn, John McCormick, Beth Goldie, Naor Wallach, Steve Gold, Peter Vekinis, Ken Takahashi, Naoyuki Yazawa, Paul Zucker, Sean McNamara, Keith Cameron, and Norman Wingrove. CANADIAN BUREAU: Grant Buckler, 859 Kennedy Road, #203 Scarborough, Toronto, Ontario, ph 416-285-0644, fax 416-285-5261

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ted documents — documents that can be clicked on to process just like any Word document created on the Macintosh."

There is also a connection product, listing for U.S.$249, for hooking into either a Macintosh or MS-DOS system for those who may already have an Atari Portfolio. The Portfolio is less than 1" in depth, weighs 1 pound and runs on 3 AA batteries. Contact: Jimmie Moglia, Computer Friends, 503-626-2291

BC Bytes

Advanced Gravis To Get Loan From Logitech

VANCOUVER, BC, AUG 17 (NB)— Mouse manufacturer Logitech International has signed a letter of intent to loan C$840,000 to Advanced Gravis Computer Technology.

Advanced Gravis, based here, makes joysticks, other input devices and a line of portable hard disk drives. Logitech is a major manufacturer of mice and scanners with headquarters in Fremont, California.

Dave Reid, vice-president and general manager of Gravis, told Newsbytes his company buys Logitech technology for use in its own products, and the companies also share an interest in sound technology for personal computers. "We don't compete with each other, we tend to complement each other." While remaining separate entities, he said, the companies plan to work together in a number of ways.

The loan is to be secured by a three-year convertible debenture, Gravis announced. The loan still depends on final agreement by each party on the form and terms of the debenture and warrants.

The debenture will be convertible, at Logitech's option, into 1,500,000 units of Gravis, at a price of C$0.56. Each unit will consist of one share of Gravis common stock and one nontransferable warrant entitling Logitech to purchase an additional share at C$0.70 within five years from the date the loan is advanced. Exercising this option would give Logitech about 34 percent of Advanced Gravis on a fully diluted basis and make Logitech the single largest shareholder.

Reid said he expects this option to be exercised, although "I couldn't tell you when." "A connection with Logitech could help Gravis in several areas, such as improving its distribution in Europe, he said.

Gravis will also give Logitech a first right of refusal to purchase any further securities it issues, except for any currently outstanding rights to purchase securities and employ incentive options.

Proceeds from this private placement will be used to repay a $300,000 (U.S.) bridge loan made by Logitech in June 1990 and to supplement working capital. With this investment, Gravis' working capital position will be improved and will allow the company a better opportunity to meet the strong expected demand for its joystick products this fall.

Reid said the original bridge loan was obtained to "keep our business rolling at the level it is now." By exercising its option to buy a stake in Gravis, Logitech may help meet future capital needs, he said.

The transaction is subject to approval by Gravis shareholders and regulatory authorities. Contact: Dave Reid, Advanced Gravis, 604-434-7274, Tim Zier, Logitech, 415-795-8500

Network Courier Gateway for MCI Mail

VANCOUVER, BC, AUG 14 (NB)— Consumers Software has announced The Network Courier Gateway for MCI Mail, which links its Network Courier electronic mail software to the MCI mail network.

Those using Network Courier on DOS, OS/2, Windows and Macintosh systems can exchange messages with MCI Mail subscribers anywhere in the world, or with remote Network Courier users also linked to MCI, Consumers said. They can also send facsimile, Telex and paper mail messages using MCI Mail.

Network Courier users can set up distribution lists containing MCI Mail addresses, allowing them to queue messages for transmission to MCI with three keystrokes.

The gateway also allows sending text or binary files as attachments to mail messages, and will address a reply to an MCI Mail address automatically. Users can get automatic notice when a message arrives, thanks to Network Courier's memory-resident software.

The Network Courier Gateway for MCI Mail costs US$695 or C$900 per gateway, plus US$200 or C$260 for each additional Network Courier post office (server). It works with IBM, Novell, 3Com, Banyan and other MS-Net-compatible networks, and requires a gateway PC with at least 350K bytes of memory and a fully Hayes-compatible modem. Contact: Michael Shandrick, Consumers Software, 604-688-4548

Battered Mission Cyrus Seeking New Financing

VANCOUVER, BC, AUG 14 (NB) — With many of its employees laid off and manufacturing severely cut back, PC maker Mission Cyrus is scrambling for new financing.

Tania Elvin, the firm's marketing manager, told Newsbytes Mission Cyrus lost expected funding from a British bank earlier in the year. Elvin could not confirm the amount, which has been reported to be C$5 million. She said Farad Azima, founder and president of the company, is currently in Britain seeking more funding.

The company has obtained a court order restraining its creditors from taking further action before October, Elvin said. "Obviously we've cut right back on our operations," she admitted, but some units are still being sold from inventory.

Azima, founder of the upscale British stereo equipment maker Mission Electronics, founded Mission Cyrus last year. The company launched a series of Intel 80386-based PC's, ranging from a portable to a file server, at Comdex/Fall last November.

Azima's Mission Group, at least one Canadian bank and the Discovery Foundation, an agency of the British Columbia provincial government, are among other investors in Mission Cyrus. Contact: Tania Elvin, Mission Cyrus, 604-432-7727

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CA-Access Updated

VANCOUVER, BC, AUG 15 (NB)—While continuing to roll out Version 6.0 of its Accpac Plus accounting line, Computer Associates has updated its CA-Access development system.

John Schoutsen, Canadian product marketing manager in CA's Micro Products Division in Vancouver, told Newsbytes CA-Access is a full development system with its own programming language and application program interface (API) to Accpac Plus. Some 600 developers worldwide use CA-Access to create companion products for the accounting software, Schoutsen said

The new release includes increased database capacity, improved file sort and merge utilities and an extended API providing international and multi-currency support and better screen input/output and print control.

Applications developed with CA-Access can run under DOS or OS/2, on local-area networks or in Computer Associates' own window environment with recompiling, the company said.

The suggested retail is price is US$1,695, or C$1,995 in Canada. Those who purchased the previous version after May 22, 1990 will receive a free upgrade. Others may upgrade for US$200, or C$200 in Canada Contact: John Schoutsen, Computer Associates, 604-733-2343

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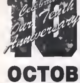

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...continued from back cover

—If a new joint venture has its way, many Canadians might be offered a choice of three rather than two long-distance telephone carriers. Lightel, a Toronto firm, has teamed up with B C. Rail Telecommunications and filed an application to offer competitive long-distance telephone service

Though the initial application covers only Ontario, Quebec and British Columbia—Canada's three most populous provinces—Thomas Elliot, president of Lightel, told Newsbytes his company would like to do business throughout the country. Lightel is a spinoff of Call-Net Telecommunications, a Toronto firm that resells telephone company services.

B C. Rail Telecommunications offers private communications services using the facilities of British Columbia Railway. Both companies own some network facilities of their own, Elliot said; they would lease additional lines from the telephone companies and Unitel Communications of Toronto to run long-distance services.

Lightel and B C. Rail Telecommunications are asking the Canadian Radio-television and Telecommunications Commission to consider their application along with one filed by Unitel in the spring Their joint venture would offer essentially the same services as Unitel wants to provide, Elliot said

Unitel spokesman Peter Janecek told Newsbytes his company has no objection to more competitors as long as all are treated equally "Why not, if the rules are the same," he said.

Bell Canada, the largest Canadian phone company, also emphasized the need for consistent rules. "We've always said that if you're going to have competition .. then you can't just stop it after one (additional carrier)," said Bell spokeswoman Linda Gervais. She said Bell favors having the Unitel and Lightel/B.C Rail applications considered at the same time Contact: Thomas Elliot, Lightel

Canada Needs Community Science, Technology, Says Report

OTTAWA, ONTARIO, AUG 7 (NB) — "Think globally, act locally" might be the motto of a recent report on Canada's high-technology industry Many of the recommendations, however, are familiar

Grassroots Initiatives, Global Success came out of the 1989 National Technology Policy Roundtable, a series of meetings sponsored by the Canadian Advanced Technology Association (CATA), the Science Council of Canada and the Canadian Chamber of Commerce. It advocates community actions to boost investment in technology research and development, use of technology and awareness of science and technology

Among its recommendations, the report urges industry to become more involved with local schools and universities, and tells universities their research efforts should be responsive to the needs of local industry. Businesses should be exchanging information with their neighbors, and those involved with technology should get involved in community economic planning, the report goes on.

"Communities must be central players in innovation. They are the environments in which most business people make decisions," the report says "Peoples' attitudes about science, technology and business form in a community context."

Nonetheless, the report also includes recommendations for national action. Among them: changes in government procurement policy to support small Canadian high-tech companies, new tax incentives for investment in research and development, creation of a national market intelligence network; a major long-term national project to "develop and install leading-edge communications infrastructure;" and greater emphasis on training

EnRoute Card Offers Travel Management Software

TORONTO, ONTARIO, AUG 13 (NB) — EnRoute Card, a Montreal-based subsidiary of Air Canada which offers travel-oriented credit cards, is offering its corporate clients PC-based travel management software

The software will let enRoute customers download billing information direct from enRoute's computers to their own systems using electronic data interchange (EDI) links. There, the enRoute Interface software will massage the data into reports in a variety of formats, explained Mireille Brisebois, director of research and development, at a Toronto press conference.

Brian Gordon, marketing manager for corporate cards, told the press conference his company expects large companies and government departments will be most interested in the software.

One department of the Canadian federal government, Health and Welfare Canada, tested the software for enRoute. At the press conference, Gary Kehoe of Health and Welfare said that based on three months of trial usage, his department estimated enRoute Interface could save it about 120 person-days of work per year

EnRoute Interface will run on IBM and compatible personal computers. The software will sell for C$1,200, Gordon said EnRoute will also charge customers eight cents per line of information downloaded from its systems.

The software is available in Canada now EnRoute will sell the software in Canada initially, Gordon said, but plans to offer it to its customers in the United States eventually Contact: Anna Relyea or Eva Rosner, National Public Relations for enRoute, 416-860-0180; enRoute, 514-393-6725

COMDEX-Bound Flights Booked Solid

SAN FRANCISCO, CALIFORNIA, AUG 8 (NB) — Those who have yet to book reservations for a flight to Comdex from San Francisco or Oakland airports for Sunday, November 11, may find themselves taking a train or bus. All direct flights from San Francisco to Las Vegas on the day before Comdex opens are booked solid; a few seats by way of Los Angeles are available but a one-way ticket can cost up to U.S.$400.

Hotel reservations in the glittery city during Comdex are also locked up All hotels on the computer systems accessed by travel agents are showing full houses on Sunday, November 11. The only available rooms are in the smaller hotels outside the immediate area of the convention center or those for which reservations are being made through the Interface Group, the show sponsors.

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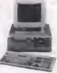

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LASER	286	386SX	386
Color VGA (.31)	$2,698	$3,898	$5,098
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seat or a hotel bed during Las Vegas' biggest convention become more arduous, with most show-goers increasingly forced to book reservations for their travel to the show a year in advance.

GENERAL

Cornell Vision Study Eyes Bad Lighting

ITHACA, NEW YORK, AUG 9 (NB) — A new study from Cornell University says indirect lighting can dramatically reduce eyestrain among VDT (video display terminal) workers.

The study, involving 147 workers at a Syracuse, New York Xerox plant, compared groups working under indirect, "bounced" fluorescent lighting and those working under conventional computer-area overhead (parabolic) fluorescent lighting. The workers in the overhead-lit area had 25% higher rate of complaints of eyestrain and said they lost 15 minutes a day because of trouble focusing their eyes. In contrast, only one percent of the computer users working under indirect lighting lost more than 15 minutes a day because of focusing problems.

Cornell's Department of Design and Environmental Analysis, which conducted the 1988 study under the direction of Dr. Alan Hedge, returned to the site last year to find that employees working under the overhead, parabolic lights had modified nearly half of them to try to improve their visual environment.

The configuration most appreciated by the employees was the indirect lighting, consisting of lensed indirect fluorescent lights which direct light upward toward the ceiling, something called uplighting. The new type of lighting is being used by companies such as AT&T, US West, IBM and other companies that rely heavily on computer-equipped workstations, according to the Cornell research team. 71 percent of the employees working under the indirect light preferred it, while 74 percent of those working under the parabolic system preferred uplighting.

Dr. Hedge said, "This is an overwhelming preference. We didn't expect to see results this one-sided, especially given that the parabolic lighting was designed for computer areas." Contact: Dr. Hedge, Cornell, 617-255-2168

Radiation SuperShield For 19-Inch Monitors

SANTA MONICA, CALIFORNIA, AUG 6 (NB) — NoRad corporation has introduced the NoRad SuperShield, a radiation, glare and reflection shield designed for 19-inch and two-page display monitors including the Sony 1950, the SuperMac 19" Display, Radius Two-Page Display, RasterOps 19" Display, Megagraphics Rival, Hitachi Superscan Plus, Sigma Laserview and other similarly sized and shaped monitors.

According to Bruce Sperka, director of marketing, the SuperShield was developed in response to the growing demand for higher-resolution larger displays. "VDT radiation levels increase with the size of the display, the level of resolution and with color. And, as larger monitors, especially those with curved bezels, become more popular, it made sense for us to extend our product line to take advantage of the two-page display market."

The new shield measures 17-3/8 inches by 13-3/4 inches from frame to frame with a usable display area an inch less in each dimension. The fabric is cut on a bias to eliminate the moire patterns that can be a problem on some color monitors and the shield is attached to the bezel by velcro tabs. The frame is shaped to conform to the horizontal curvature of the bezel.

The SuperShield is now available through NoRad and its dealers at a suggested retail price of U.S.$349.00 Contact: Michelle Hartzell, NoRad Corporation, 800-262-3260

Protest Held At Lotus Development

CAMBRIDGE, MASSACHUSETTS, AUG 6 (NB) — A protest march, organized by the League for Programming Freedom (LPF), was held on August 2 at Lotus Development Corp.'s Cambridge, MA offices to protest Lotus' recent legal activities concerning copyright issues.

League President Richard Stallman told Newsbytes that the protest went extremely well and that all demonstrations were performed in a peaceful manner. "We had about 320 people according to our count. We formed at about 12:30 at MIT and began the march about 1:00 We got to Lotus about 1:15 and then we had short speeches by Patrick Winston of MIT's AI Laboratory, John McCarthy from Stamford, Javelin Software founder Stanley Kugel and myself. We then began to picket and finished up about 2 p.m." Stallman said that the main purpose of the demonstration was to heighten public awareness and to attract interest from Congress.

Stallman went on. "There were some very innovative signs in the picket line such as 'Can Las Vegas Sue Atlantic City?' and 'Lotus Says If You Can't Beat Them, Sue Them!' and 'Drop the Suit, We Have You Surrounded!' The point of all this is that we don't believe that anyone has the right to own a user interface. The public invests too much time and resources in learning a user interface for anyone to claim ownership of it."

Stallman said that one of the enjoyable parts of the demonstration was the chanting by the crowd of the Hex Chant, "something we composed last week." It goes like this: "1-2-3-4; Kick that lawsuit out the door—5-6-7-8; Innovate, don't litigate—9-A-B-C; Interfaces should be free—D-E-F-O—Look and Feel has got to go."

Stallman also told Newsbytes that a Lotus employee came out to pick up material and stickers and told LPF members that "while there was support for the League within Lotus, management had instructed the personnel to stay away."

Tom Lemberg, general counsel for Lotus, was quoted as suggesting that the protesters should also picket stores that sell books and records since they, like software, represent the expression of an idea, "The underlying question is why do we have copyrights," Lemberg said. "We have copyrights to protect creators, to provide incentives to innovate." Contact: Richard Stallman, LPF, 617-243-4091

IBM WORLD

IBM Slims Down & Spins Off

ARMONK, NEW YORK, AUG 2 (NB) —IBM has announced that it has formed a new wholly owned subsidiary which consolidates IBM's typewriter, keyboard, intermediate and personal printers and supplies business in the United States. It also announced that it will work with Clayton & Dubilier, Inc. to form an alliance under which Clayton & Dubilier will become the majority equity owner of the new subsidiary.

IBM Vice President Marvin L. Mann will become chief executive officer of the new company which includes IBM's Information Products business, largely from IBM facilities in Lexington, Ky., and Boulder, Colo. The new company is expected by the end of the year to have 3,500 to 4,000 employees.

As a result of this announcement, eligible employees in Lexington will be offered the opportunity to voluntarily resign, retire or begin a five-year pre-retirement leave with an incentive payment.

IBM spokesperson Mac Jeffery told Newsbytes that the formation of the new subsidiary and subsequent selling of it is "another phase of the overall slimming of our workforce as announced earlier in the year." He said that, now that step 1, the spinoff, had been completed, IBM hoped to conclude the sale by the end of the year. Jeffery also told Newsbytes that a name had not yet been chosen for the new firm.

Rick Martin, Prudential-Bache's computer industry analyst, told Newsbytes that he felt the sale of the new entity would benefit both IBM and Clayton & Dubilier. "If you look at it from IBM's side — This business brought in somewhere between two and three billion dollars in revenue resulting in U.S.$75-150 million in net income — or 15 to 25 cents per share. The impact on IBM is tiny. Even though that segment of the business has growth potential, the time, energy and money that would have to be put into it is, in IBM's case, much better spent on mainframes or PC's.

"As far as Clayton & Dubilier is concerned, however, the business potential is enormous. The unit being acquired is presently profitable and the staff reductions will make it even more so. Additionally, it has a market that IBM never had,

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the market to firms other than IBM and the potential looks very good there. For instance, IBM has a laser printer that is Canon-engine compatible and is 25% faster. The new firm should be able to generate additional market share with products like that."

Martin says IBM's Lexington plant, which goes with the deal, is one of the lowest-cost production facilities in the world and can produce commodity products such as keyboards at as low product cost as any company in the world. "The new firm should become a factor in the world marketplace for these commodities and be one of the few U.S. firms that can outperform Far Eastern rivals on a cost basis. In short, I think it's a helluva deal," he said.

A spokesperson for Clayton & Dubilier said the company is a private investment founded as 1978. Since that date, it has acquired 15 businesses whose sales total around U.S.$7.5 billion. Its normal manner of acquiring business has been through investment in divisions of large corporations which are no longer considered part of the core business. Contacts: Peter W. Thoma, IBM, 914-765-6565; Thomas C. Franco, Clayton & Dubilier Inc., 212-742-1282

Delrina Offers Windows 3.0 Fax Drivers

TORONTO, ONTARIO, AUG 3 (NB) — Delrina Technology has announced two fax drivers for Microsoft Windows 3.0.

One version works with fax boards complying with the CAS standard, including those from Intel, Pure Data, Spectrafax and others. The other version works with fax modems that use the Sierra Semiconductor Sendfax chip set. Both versions include a driver that looks to Windows like a regular print driver, so users of any Windows application can send a fax as if they were printing a document, Delrina said. Contact: Josef Zancowicz, Delrina, 416-441-3676

SimplSoft Products Releases The Magic Package 1.1

BOULDER, COLORADO, JUL. 29 (NB) — The Magic Package, version 1.1, has been released by SimplSoft Products. It consists of The SuperCalc Macro Book published by Scott, Foresman, Inc. and Macro Magic, published by SimplSoft Products.

Using Computer Associates' major enhancements to SuperCalc 5, The Magic Package takes advantage of a powerful spreadsheet macro language providing users with the applications and tools to create applications that no longer look like spreadsheets.

Lester Karplus, president of SimplSoft Products, has told Newsbytes that while The Magic Package is a comprehensive macro and application library, it is not a conversion of other spreadsheet add-on products.

The Magic Package, written by Lester Karplus and Ed Karl, required SuperCalc 5, Revision C and is available in both 5.25 inch and 3.50 formats for U.S.$69.95. Contact: Lester Karplus, SimplSoft Products, 303-444-8771

Caere Hand Scanner For PC's

BOSTON, MASSACHUSETTS, AUG 9 (NB) — Caere Corp. (Los Gatos, CA) is showing off a hand-held scanner which it says can place text directly into a software application, without any need for an intermediary utility program — a breakthrough in input devices.

The Caere Typist, U.S.$695 for the Mac version and U.S.$595 for the PC version, is said to have true 300 dpi CCD input array and lets users scan information into an application at the rate of 500 words per minute.

Larry Miller, Caere's vice president of marketing and sales for office products, said this as prepared remarks: "The Typist sets a new standard for speed, ease-of-use, practicality and versatility, and its price point — under U.S.$700 — makes page recognition very affordable to individuals as well as all sizes of businesses."

Designed specifically for page recognition, the Typist uses Caere's AnyFont optical character recognition technology to recognize text regardless of the font style or the number of columns on a page, the company says. This enables users to take information from almost any hard copy source and put it directly into word processors, spreadsheets, databases or other applications.

Caere's Typist enables the user to input scanned, recognized material directly into whatever application is currently running on the user's computer. This direct input is made possible by a design methodology which interrupts the keyboard operation and allows data to enter the application via the keyboard buffer.

Caere's software is capable of recognizing multi-columned pages, one column at a time. To prevent column overlap, the Typist recognizes the column that is in the physical center of the scanner and throws away the incomplete columns on either side. The hand scanner also automatically discards repeated text which occurs when two scans overlap by comparing the ASCII text of the last line of the first scan with the ASCII text of the first line of the second scan. This procedure is commonly referred to as "stitching."

The Macintosh version of the Typist requires four megabytes of RAM and a Macintosh SE or any member of the Macintosh II family. It will ship in September.

The 80286 and 80386 versions require IBM PC or compatible with an AT bus or a Micro Channel bus, 640 kilobytes of base memory, two megabytes of expanded/extended memory and a hard disk. They are expected to ship in the fourth quarter of 1990. Contact: Larry Miller, Caere, 408-395-7000

Database Information From Free BBS

SAN DIEGO, CALIFORNIA, AUG 8 (NB) — Data Based Solutions, Inc. (San Diego, Calif.) has made its electronic bulletin board free of charge to all callers. The bulletin board, which addresses database management topics at the PC/LAN level, was previously available only for a U.S.$19.95-per-year membership charge.

"We wanted to make things as easy as possible for our readers," says David Kalman, editor-in-chief. "When you want the source code from a magazine article, you want it now, not tomorrow. Now you can get it, free."

The bulletin board is divided into a general board and four conferences: compilers (Clipper and Quicksilver), dBASE Emerald Bay, and a new FoxBase+ and FoxPro conference. Users can access the board using any Hayes-compat-

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able modem at 1200 or 2400 baud, with parameters set to N-8-1. The BBS number is 619/270-2042, and the voice number is 619/483-6400.

Tandy Launches New 6-Pound Computer

NEW YORK, NEW YORK, AUGUST 7 (NB) — Tandy has launched the Tandy 1500 HD, a 6-pound computer equipped with both floppy and hard drives. The device sells for U.S.$1,999, and will be available starting in September at Radio Shack dealers nationwide.

The 1500 HD relies on the NEC V-20 microchip running at 10 megahertz, giving it power on a par with desktop units running the 80286. It includes a 3.5 inch, 1.44 megabyte floppy drive and an internal 20 megabyte hard drive standard, with the MS-DOS 3.3 operating system and Tandy's own DeskMate software installed. The screen measures 7.5 inches by 4.8 inches. A rechargeable NiCad battery gives over 3.5 hours of power per charge, and comes with a light at the top-right of the case which goes on when the power is low. Contact: Fran McGehee, Tandy, 817-390-3487

Heizer Introduces ConvertIt!

BOSTON, MASSACHUSETTS, AUG 13 (NB) — Heizer Software, at the recent MacWorld Expo/Boston, introduced ConvertIt!, a program that translates HyperCard stacks into ToolBook format to allow conversion to that MS-DOS Windows-based product. The program is presently available at a suggested retail price of U.S.$199.

ConvertIt! is actually a collection of programs that revolve around a new interchange format, HIFF (Hypermedia Interchange File Format), that has been designed in conjunction with ConvertIt!. A Macintosh program converts the HyperCard stack into HIFF format and a MS-DOS program reads the HIFF file and performs the conversion into ToolBook format. The MS-DOS program notes all the un-convertible features, such as XCMD calls, and these must be implemented directly into ToolBook by the programmer.

Ray Heizer, Heizer's president, told Newsbytes: "While you can't predict the conversion success for any single program, we have found that, on average, ConvertIt! handles 80 percent of the conversion work. As an aid to the manual work, we furnish a dictionary of HyperTalk and OpenScript equivalents in both stack and book format."

Heizer also said that, as other hypermedia products develop, "programs to translate those formats to and from HIFF will be developed." Contact: Ray Heizer, Heizer Software, 415-943-7667

What If Spreadsheet Add-In for 1-2-3

PALO ALTO, CALIFORNIA, AUG 15 (NB) — Frontline Systems, has announced What-If-Solver, U.S.$200, a new what-if backsolving add-in for Lotus 1-2-3. It allows you to play with the figures in your spreadsheet temporarily without altering the data you already have in your main application

What-If-Solver is the 9th add-in product for Lotus 1-2-3 published by Frontline, a firm founded and run by Daniel Fylstra, founder and former CEO of the once powerful VisiCorp (Prior to its demise, VisiCorp marketed VisiCalc, the industry's first spreadsheet and the forerunner to 1-2-3)

The What-If-Solver package contains add-ins for 1-2-3 Release 2, 2.01, 2.2, 3.0, and Symphony 1 1, 2 0, 2.2, running DOS. The version for 1-2-3 Release 3.1 will be supplied free upon request to registered users. Contact: Peter Moseley, 215-935-3476

Word For Windows Update Version 1.1

REDMOND, WASHINGTON, AUG 15 (NB) — Version 1.1 of Microsoft's Word for Windows, its word processor for the PC, is now shipping Microsoft says the program offers more file conversion capabilities and macros, and is fully compatible with Microsoft Windows version 3.0

The new interface gives the program a "3-D" look on its ribbon, ruler, status bar, outline icon bar, and dialog boxes. The bold button looks as if it is pushed in when selected by a user.

The program is available for U.S.$495. Updates are U.S.$7.50 to owners of version 1.0 A special upgrade price of U.S.$150 is being offered to users of any version of Microsoft Word for the PC. Microsoft is also offering Microsoft Windows version 3.0 for just U.S.$50 to Microsoft Word owners updating to version 1.1

Telecom & FAX

Canada Remote Systems Shuts Down

TORONTO, ONTARIO, AUG 14 (NB) — What was Canada's largest bulletin board system ceased operations at about 9:00 a.m. on Monday, August 13, but subscribers have submitted to the official receiver a bid to put the board back on line.

Calls to Canada Remote Systems' voice and data lines produce a Bell Canada "the number you have reached is not in service" message At a separate number posted on the board by founder and system operator Jud Newell last week, Newell's recorded voice says the board is out of service but the receiver has received offers to buy its assets.

At another number, which members were told to call for information on the member buyout plan, another recorded message says the member offer has been submitted to the receiver. In a recorded message, former CRS employee Brenda Brennan, who is co-ordinating the offer, says the group has not yet met with the receiver but the offer is proceeding.

The member buyout plan allows subscribers to pay C$250 per share for a limited number of shares in the bulletin board operation, in exchange for reduced subscription fees and a share of any profits.

Contact: Jud Newell, 416-231-4213; Brenda Brennan, 416-709-3271

Work On Fax Board Standard Continues

IRVINE, CALIFORNIA, AUG 13 (NB) — Products incorporating the "Class One" standard for fax boards should be announced at this year's Fall Comdex in Las Vegas, but the leading players in the industry will stay with proprietary designs until the market forces a change. That's the view of Dale Bandy, a vice president of Silicon Systems Inc., which is designing a chip set that will implement the so-called EIA 578 Class One standard. That product may reach the market by the end of this year, or early in 1991.

Bandy told Newsbytes the Class One standard, which won final approval in February, is "a basic definition for the control of fax functions in a PC environment," but it's limited and requires an intermediate driver before it's installed.

Standards work is continuing on two levels — an extension of the standard which would be called Class Two, and a more complex interface between modem and fax being worked out as the TR-30 group. This work was stimulated by Hayes Microcomputer Products of Atlanta, Bandy said, which offered an enhanced version of its own AT command set. "It holds promise, but it's not final," Bandy said.

Despite the continuing work on standards, the leading players in the fax board business continue to release proprietary designs, Bandy said, including Gammafax, Spectrafax, and The Complete PC, which currently is the sales leader. Datarace of Texas is one of the few with a Class One product on the market, Bandy said, but more may be expected in time for the Fall Comdex show.

The significance of all this is threefold, Bandy said. An established standard would let software developers insert fax capability into base applications. It would allow for the creation of standard fax applications running with any fax board — a fax version of "Crosstalk" or "Procomm Plus." Finally, once a standard is implemented in chip form all board manufacturers could use it. Contact: Dale Bandy, Silicon Systems, 714-731-7110

Trends

SIGGRAPH Predicts HDTV, Computer Graphics Will Become One

NEW YORK, NEW YORK, AUGUST 7 (NB) — A new study from ACM Siggraph's special interest group on computer graphics predicts that computer graphics and high definition television technologies will soon converge, as HDTV shifts into niche markets. Over the long term, the study adds, HDTV could significantly influence the evolution of desktop workstations.

HDTV is most familiar as a consumer technology, pushed by Japanese manufacturers as a way to enhance ordinary TV reception. At the March convention of the National Association of Broadcasters, a number of Japanese companies demonstrated HDTV systems which operate within existing bandwidths. The Siggraph study predicts that HDTV standards will be built into tomorrow's flat screens for workstations, and used in the production of so-called "virtual reality" interfaces, in which users can interact directly with computer-created images as though they were in the picture. Contact: Fred Rackmil, for ACM Siggraph, 212-421-0044

Hitachi Recycles Paper, Shuns Wooden Chopsticks

TOKYO, JAPAN, JUL 24 (NB) — Hitachi's plan to use recycled paper, and to abandon use of disposable wooden chopsticks, are just two of the measures it has instituted in an effort designed to help save the earth.

Hitachi's Green Center is a new facility staffed with 60 researchers whose job is to design methods to combat acid rain, the greenhouse effect, the destruction of ozone layer, and other environmental issues.

Hitachi says it currently consumes 1.7 million business cards, 0.5 million envelopes, 1.3 million interoffice mail messages, one million copies of press releases, 59 million sheets of copy paper and 4.8 million computer pages annually. It also estimates total consumption of paper is 10 times larger when all its offices in Japan are taken into account.

Hitachi will switch to recycled paper in September and disposable chopsticks have already been replaced with plastic chopsticks at its cafeteria. Contact: Hitachi Co., Ltd. 03-258-1111

Motorola Introduces Wristwatch Pager

SCHAUMBURG, ILLINOIS, AUG 1 (NB) — At a New York news conference, Motorola introduced a wristwatch pager weighing just 2 ounces, or 57 grams. It will retail for U.S.$300 and be distributed, at first, by existing pager companies. Motorola also announced a distribution agreement with Timex, the leading U.S. watch distributor, which will put the pager into the mass market within two years.

The announcement comes just weeks after the debut of the film "Dick Tracy," based on a comic strip whose hero uses a wristwatch TV. And Motorola won't be alone in the market — AT&E of San Francisco has already introduced a similar device, and Japanese companies are also expected to enter the market.

Motorola has protected its pager with 11 patents, including one for an antenna which runs around the watch face and through the watchband. The Motorola wrist pager is water-resistant, spokesman Bob Walz told Newsbytes. "You can wear it jogging, but I wouldn't jump in a swimming pool with it," he said. "I wore it in the rain in New York yesterday with no problems."

The Motorola unit also acts as an alarm wristwatch, and can store up to 8 messages. It is compatible with all existing U.S. radio paging systems. The spokesman said that new device falls near the high end of Motorola's current pager price range, and paging companies can be expected to rent it for about U.S.$25 per month, including service costs.

Motorola executives told reporters there are currently 9 million pagers in use in the U.S., but 150 million watches are sold every year. "The question here is the shape and form-factor," the spokesman added, "the way you use the pager. Obviously watches are user-friendly, and this may open up new markets." At the press conference, Motorola suggested parents may use the watch-pager to keep in touch with their kids.

If granted local regulatory approval, the watch pager will be introduced in Canada, Britain, Singapore, Hong Kong and Taiwan by the end of the year, Motorola executives said. Contact: Bob Walz, Motorola, 708-397-5000

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Book-To-Bill Ratio For Semiconductors Falls In July

SAN JOSE, CALIFORNIA, AUG 14 (NB) — The closely watched indicator of the health of the US semiconductor industry, the book-to-bill ratio, fell in July to its lowest level to date in 1990. According to the Semiconductor Industry Association, the ratio fell to 1.0 in July from 1.6 in June.

The book-to-bill ratio compares incoming orders with outgoing shipments. A ratio of 1.0 means that incoming orders are equal to outgoing shipments. A ratio of less than 1.0 is considered unhealthy for the industry.

The Semiconductor Industry Association attributes the lower ratio at least in part to a seasonal slowdown in orders for chips. The ratio is calculated using a rolling three-month average. Both average monthly bookings and average monthly billings stood at U.S.$1.19 billion for the three-month period.

In July, average monthly bookings were down 6.4 percent from June and average monthly billings were off 1 percent, according to the association. Actual billings were down 16.7 percent in July as compared with June while orders were up 3.5 percent from July 1989 and shipments were down 4.9 percent as compared with a year ago

Hi-Tech Store Shelf Labelling System Minimizes Errors

SYDNEY, AUSTRALIA, AUG 14 (NB) — Bull/TCG is to internationally market a new Australian invention for retail-store price ticketing. The system uses store lighting to carry the price information to intelligent price tags.

Called ILID (indoor light interactive displays), the system consists of small liquid crystal display (LCD) modules, complete with a photo-detector, microprocessor and storage. The shop lighting is modulated with information on price changes.

The data is detected by each price module and when the processor recognizes its code, it updates the price stored in its memory, and displays it on the LCD screen. This means that prices on the shelves should always match those charged at the check-out from the product's bar-code.

The modules are self-contained, with the minimal power requirement provided by a solar cell which also keeps a battery charged so the modules can hold data for more than 72 hours of darkness. In addition, the labels can be used for purposes such as displaying stock numbers for stock-taking, or shelf-replenishing data for after-hours shelf packers. The system is not limited to retail sales but could also be used in warehousing and storage situations.

Program To Manipulate The Effects Of Physics Unveiled

MOSCOW, U.S.S.R., AUG 15 (NB) — A program that can help tie together various theories of physics to solve complex design problems has been developed by the Moscow-based co-operative Metod.

Nikolay Svetlov, co-op chief, told Newsbytes that the program, called "Princip destwiya" (the principle of the action), is the result of teamwork by six PhD's in several fields of science and several experienced programmers. The Metod co-op is one-and-a-half years old and employs about 50 people.

The new program can show users how to find the right process through which to convert one physical effect into another using a proprietary physics effects array. It links different general laws of physics from a 1,000-piece library together and shows a series of connections between the resulting effects in plain language.

According to Svetlov, "Even the smartest people usually can't work with more than 200 effects simultaneously. Our program uses 1000 of them and works much faster. Of course, you have to be smart enough to give the computer the proper command.

"There's another developer with a system of this type in West Germany but we think our product utilizes a much better algorithm for searching the knowledge base," Svetlov explained.

The package is available immediately from Metod, which can be reached at P.O.B. 453, Moscow 119048, U.S.S.R. It costs 10,000 roubles (U.S.$400 by the market rate) per one copy-protected diskette. According to Svetlov, Metod still is having problems opening hard currency accounts in the only Moscow bank allowed to handle such transactions but they welcome foreign orders even though the price in dollars may be higher than the one translated by the market-driven exchange rate. Contact: Nikolay Svetlov, Metod, +7 095 245-4307

Unix

SCO Unix System V/386 Release 3.2 V.2.0

SANTA CRUZ, CALIFORNIA, JUL 29 (NB) — The Santa Cruz Operation is shipping SCO Unix System V/386 Release 3.2 Version 2.0, which is said to offer improved speed and new features that make it the most advanced Unix System developed for 386 and 486 PC's.

SCO says its new version supports all 386 and 486 computers based on Industry Standard Architecture (ISA), Extended Industry Standard Architecture (EISA), and Micro Channel Architecture. It's also the foundation of Open Desktop, SCO's graphical operating system.

SCO Unix System V/386 Release 3.2 Version 2.0 adds several new features to the earlier version, including I/O performance improvements, simplified management of C2-level trusted systems, job control under the Korn shell, support for several new peripherals, and support for extended memory

SCO Unix System V/386 Release 3.2 Version 2.0 is available now on 5.25" and 3.5" diskettes and on cartridge tape from domestic SCO Authorized Distributors and Resellers for a U.S. list price of U.S.$595 for a two-user license and U.S.$895 for an unlimited-user license. An update package for users of SCO Unix System V/386 Release 3.2 is available through these same channels and from SCO at a U.S. list price of U.S.$150.

SCO Shipping Microsoft Word For AT&T Unix

SANTA CRUZ, CALIFORNIA, AUG 7 (NB) — The Santa Cruz Operation is now shipping Microsoft Word 5.0 for AT&T 3B2/400, 3B2/500 and 3B2/600 computers running the AT&T 3B2 UNIX Operating System, and for AT&T 6386 computers running the AT&T UNIX System V/386 Release 3.2 Operating System.

The UNIX System version is functionally similar to the MS-DOS version, including menus with prompts, as well as speed keys for bypassing menus. Microsoft Word 5.0 requires fewer keystrokes than other word processors to set tabs, margins, headers and footers, or to execute other routine processing tasks, SCO says.

Microsoft Word 5.0 provides a full set of workgroup productivity tools, all of which are designed to work with the powerful multiuser, multitasking features of the UNIX System. They include links to other applications, so that graphics and spreadsheets can be integrated into word processing documents, style sheets that ensure consistent, high-quality output, an advanced outliner that makes it easy for groups to brainstorm and restructure documents quickly; annotation and redlining features which take the confusion out of editing documents within a workgroup, and advanced tools for archiving and retrieving documents.

Microsoft Word 5.0 for UNIX Systems is available now from SCO authorized distributors and resellers in the United States and Canada for the AT&T 3B2/400 at a U.S. list price of U.S.$1,495, for the AT&T 3B2/500 and 3B2/600 at a U.S. list price of U.S.$2,395, and for the AT&T 6386 running AT&T UNIX System V/386 at a U.S. list price of U.S.$1,095.

For further information on these products, call 1-800/SCO-UNIX (726-8649) in the United States and 1-800/461-6962 in Canada. Contact: Janet Morton, SCO, 408/425-7222

SPECIAL REPORT

MacWorld Expo

Major New Products

MASSACHUSETTS, AUG 8 (NB) — Boston's MacWorld Expo opened with an address by Apple CEO John Sculley and a legion of new product introductions. The trade show and conference ran from Wednesday, August 8th through Saturday August 11th.

Among the companies introducing new products at the exposition was Acius, Inc. (4th Dimension, V 2.1), Adobe Systems, Inc. (Illustrator 3.0), Animus (24-bit color scanner), Avery (MacLabelPro), Caere Corporation (The Typist), I.S.M, Inc. (Life & Death II - The Brain), MacAvenue (Protege external hard disk), Motion Works (AddMotion), OCR Systems, Inc. (ReadRight), Orchid Technology (OrchidFax modem for MacPortable), Spinnaker Software Corp. (Plus), TGS Systems (Prograph 2.0) and Visual Business Systems (GraphMaster) and XOR Corporation (MacSki). Contact: Jeff Arcuri, Mitch Hall Associates, 617/361-8000

Microlytics Encyclopedia

BOSTON, MASSACHUSETTS, AUG 8 (NB) — Microlytics Inc. has announced an electronic version of The Random House Encyclopedia, which uses the company's existing Inside Information retrieval engine.

The new encyclopedia, announced at the MacWorld Exposition, will be available both for the Macintosh and the IBM PC, company officials said. It is scheduled to ship in October and cost U.S. $119.

The Random House encyclopedia is broken down into nine categories: Geography, the Arts, Science, Sports & Leisure, History, Philosophy/Religion/

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Mythology, Social Science, and Law and Government. Each category contains several subcategories and articles.

Like Inside Information, the encyclopedia uses a reverse-dictionary technology called RWord Nerd, developed by and licensed from Xerox's Palo Alto Research Center (PARC).

Mark Homuth, national sales manager for the Pittsford, NY-based Microlytics, said future releases will include Strunk & White's Elements of Style and the Bible. In addition, Microlytics officials said the company is licensing a style-checker and copy editor for inclusion in other companies' products. Writers Suggestions and Reminders is available for the Macintosh, IBM PC and Unix environments. No price was stated.

Contact: Bob Lang, Microlytics, Inc. 716-248-9150; Maria Pignataro, Connors Communications, 212-431-9300

QuickKeys Upgrade Due

WEST DES MOINES, IOWA, AUG 2 (NB) — An upgrade of the popular QuicKeys keyboard macro utility for the Macintosh will be available in mid-September, CE Software officials say.

QuicKeys 2 is now entering beta testing, said company spokeswoman Sue Nail. Suggested retail price will be U.S. $149.95, with upgrades costing U.S. $49.95. Users who buy the current version after August 1 will be able to upgrade for U.S. $29.95. QuicKeys is a popular utility used to assign single-keystroke equivalents to many Macintosh functions, including mouse movements and clicks, menu selections and system functions. Among the new features, Nail said, will be learning mode. QuicKeys 2 will let users show the program the desired functions, replacing the current method of teaching the program with a menu system. Contact: Sue Nail, CE Software, 515 224-1995)

Apple and Outbound Reach Property Rights Agreement

CUPERTINO, CALIFORNIA, AUG 1 (NB) — Apple Computer, Inc. and Outbound Systems, Inc. have announced that they have reached an agreement concerning intellectual property issues revolving around Outbound's manufacture and sale of a Macintosh-compatible laptop computer. Specific details of the agreement were not released.

The companies issued identical press releases on the agreement, saying only that, "The agreement allows Outbound to offer its products without violating Apple's intellectual property rights. Apple and Outbound believe the agreement will be beneficial to Apple, Outbound and their respective customers, as it protects Apple's rights while permitting Outbound to pursue market opportunities for its system."

Christopher Escher, Apple spokesperson, expanded on the release to Newsbytes. "We are not, contrary to rumors, buying Outbound Systems. We are not licensing our Macintosh ROMS to Outbound. Outbound will not be manufacturing units to be sold under the Apple name."

Jane Rubinstein, Outbound spokesperson, told Newsbytes, "We believe that the agreement is a positive development for the company and we're happy to be doing business with Apple's blessing. Customers who might have had any concerns in this area can now be assured of Outbound's continued presence in the market."

Contacts: Christopher Escher, Apple, 408-974-2202, Jane Rubinstein, Outbound, 303-786-9200.

Adobe Intros Illustrator 3.0

MOUNTAIN VIEW, CALIFORNIA, JUL 24 (NB) — Adobe Systems announced that it would demonstrate Adobe Illustrator 3.0, a new version of its Macintosh drawing program, at Boston's MacWorld Expo, August 8-11. It also said that the program, scheduled to ship in August, will have a suggested retail price of U.S. $595.

Enhancements to the product include text-handling capabilities and graphing tools. The product also includes a redesigned version of Adobe Separator, Adobe's color separation software and provides compatibility with Adobe Photoshop files.

Also bundled with the new version of Adobe Illustrator 3.0 will be Adobe Type Manager (ATM) Version 2.0, announced concurrently with the new version of Illustrator. The upgrade will have a suggested stand-alone retail price of U.S. $99 and will also be demonstrated at MacWorld Expo.

Adobe states that its testing has shown ATM 2.0 to be twice as fast as the previous version and provides type quality improvement in screen display. ATM 2.0 is scheduled to be available for purchase on August 8 and registered ATM owners can upgrade to the new version for U.S. $20 (+ U.S. $7.50 shipping). Registered owners can also choose, for an additional U.S. $39, to receive any typeface package from the Adobe Type Library of font software.

Commenting on the announcement, Kathy Englar, Adobe group product marketing manager, said, "Many customers want to build their own personal type library but have not been able to make the investment. Now, this special package offers a large collection of our most popular typefaces at a very affordable price." Contact: LaVon Collins, Adobe, 415-961-4400

New Ways To Talk To Your Computer

BOSTON, MASSACHUSETTS, AUG 13 (NB) — The sight of people talking to their Macintoshes will become more commonplace, if the promises of a Massachusetts company are fulfilled.

Articulate Systems, Inc., Cambridge, MA, announced and demonstrated Voice Navigator II last week at MacWorld Expo. The new product is scheduled to be available at the end of this month for U.S. $595.

Voice Navigator II is a scaled-down version of the original Voice Navigator. It has all the capabilities of its predecessor except audio output and the ability to control telephones — two features only supported for third-party developers. New software makes the product easier to train and to use.

Articulate also announced and demonstrated Voice Link, a speech digitizer

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designed to compete with Farallon's MacRecorder. VoiceLink contains a Texas Instruments Digital Sound Processor and supports the Macintosh Audio Compression/Expansion (MACE) standard. Unlike the MacRecorder, Articulate officials said, Voice Link performs all its digitizing itself, leaving the host Macintosh free for normal tasks.

Support for the Voice Link was announced by CE Software, publisher of QuickMail, and by Microsoft. Both companies also have interfaces to MacRecorder, allowing users to attach sound to electronic mail.

Voice Link will be available at the end of August, company officials said, for U.S. $269. Contact: Lauryn Jones, Articulate Systems, 408-370-0949

New PixelPaint Professional Introduced

BOSTON, MASSACHUSETTS, AUG 9 (NB) — A new, completely rewritten version of the PixelPaint Professional color painting program for the Macintosh has been announced by publisher SuperMac Technology.

The program is scheduled to be available in October at a price of U.S. $799. Upgrades from PixelPaint Professional will cost U.S. $125, with free upgrades for users who buy version 1.0 after August 1. Upgrades from PixelPaint to PixelPaint Professional 2.0 will cost U.S. $299. Contact: SuperMac, Kim Tarter, 415-592-7600; Jennifer Delamare 408-773-4403. VideoLogic: Karyn Scott: 617-494-0530

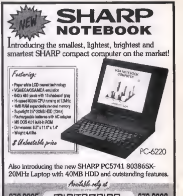
Ventura for the Mac

BOSTON, MASSACHUSETTS, AUG 9 (NB) — Ventura Software, San Diego, has rolled out a Macintosh version of its popular Ventura Publisher desktop publishing program, which it says has been completely rewritten for the Mac. Slated to be commercially available in fourth quarter, 1990, the product will retail for U.S. $795.

The program will be able to exchange files or "chapters" with PC versions of Ventura: PC GEM version, Windows 3.0 version, and the OS/2 Presentation Manager Version, a Ventura spokeswoman tells Newsbytes. This capacity will be demonstrated publicly on September 30 through October 2 in San Jose, California, at the Red Lion Inn, site of he 1990 Ventura Publisher Seminar.

New features for the Ventura Publisher, Macintosh Edition include spell checker, undo/redo, apply/cancel with dialog box chaining, movable dialog boxes, 300 on-line help menus and file import/export capabilities, the company says.

Although the Ventura Publisher DOS/GEM Edition is the basis for some 100 existing third-party enhancement products, the Macintosh edition has but one so far. SNA Inc., manufacturer of VP Toolbox, a file and style sheet manager for the DOS/GEM environment, will be shipping a Macintosh version upon release of Ventura Publisher, Macintosh Edition. Ventura Software says it is actively building a following for the Macintosh Edition. Contact: Judith Tarabini, Hill and Knowlton, 408/496-6511; Ventura Software, 619/673-0172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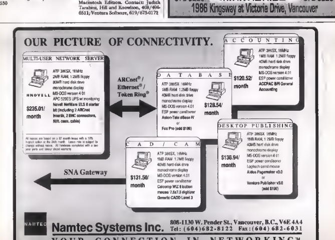
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How To Get The Most Out Of Computer Courses

by Robert Ford

In many businesses, computer training is considered a special event Often it's difficult to get a training budget that matches staff needs. When choosing courses, make sure the benefits are worth the effort and money.

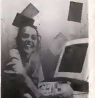
Successful training begins when you are choosing the computer course vendor. When comparing prices watch for various features:

How many students will be in each class?

The fewer the better. Ten should be the maximum for a hands-on style course. One-on-one training should be reserved for when the learner has a very specific need.

Will each student have their own computer in the class?

Learning a computer software package takes practice. Sometimes, though, it's useful to have a partner when figuring out problems. Talking through a concept makes it easier to remember. At certain points in the course, an instructor may put you in a team to let you practice.



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Is the classroom comfortable?

Will the decor turn your brain off? Are there windows? Natural light is better, but are the fuchsia drapes offensive? Adults have an average attention span of twenty minutes, Ask how often breaks occur. Several short breaks are better than a couple of long ones. It is always a treat if the vendor feeds you at breaks, but watch out for too much sugar and caffeine These give you a quick "high" but, when it wears off, you may feel draggy during class. Fruit and juice are better snacks as they don't give that "quick-fix" sensation. (Besides, 87 muffins will ruin your figure.)

Are the other students in the class at your level?

It is frustrating to be in a class where the pace either lags or dashes ahead. This the hardest factor for a vendor to control. Pre-class surveys help, but the humble people underrate their skills and the over-confident say they know more than they do. In addition, everyone has a different learning speed and style. A person who knows nothing may be so quick that their inexperience is irrelevant. An experienced person may find themselves trying to unremember their company's old computer system.

How many hours or days is the course compared to competitors' courses?

Make sure you see allotted plenty of practise time.

Do you have a computer to use when you return to the office?

If not, the training could be a complete waste. A computer course is often just the start to being able to do your work. To retain the material of the course, apply it right away

What does the course cover? Does it match your needs? Will you be able to do what the boss wants you to do?

Once you've found a vendor that suits your personal and financial points of view, prepare for the class. Ask yourself what it is that you want to know This may seem an odd question; if you know what you don't know, why are you taking a course?

No course will cover every aspect of a computer application. For example, the Lotus 2.2 manual has about 500 pages, excluding appendices. A one- or two-day course won't cover it all. Nor should it. The job tasks you have to complete are what matter

Are you doing budgeting? Administering payroll? Investment tracking? Office expenses?

If you don't know, quiz co-workers and see if they can describe how the company uses the product you're learning about. If you are arranging courses

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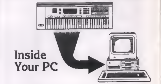
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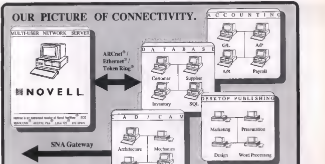
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for others, make sure you tell the students what is expected of them. In addition, tell the course vendor what you want people to learn from the course.

What should you expect from the instructor?

An instructor should have patience, clear speech, useful handouts, flexibility and a sense of humour. Unless you are taking an advanced course, a trainer will assume you know nothing. Sometimes, a course will have "homework" to do before arriving at the class. If this is the case, do the work. And, if possible, don't complete it moments before class. The point of such material is to make your brain ready to receive new information and ideas.

You should also physically prepare for the course. Get a good night's sleep and eat breakfast.

What do you do once you have chosen a course?

So, you've picked the best course and are in the class. Now what? Sit there and hope? In a class, there are means to help yourself learn more. Make it easy for an instructor to teach you. In a learner, an instructor likes:

- **Enthusiasm.** Nothing makes an instructor more depressed than teaching a class of disinterested slugs. Bring a desire to learn to the class.
- **People who ask questions.** A good trainer will modify the course content on the fly to suit your needs, if the needs are known. This is the purpose of asking questions. If you are a shy person, try hard to think of a question to ask. The instructor may elicit a question from you to see if you are following the material. Those who talk a blue streak, make sure that you let others ask questions. What they say may assist you in your own work.
- **Don't ask Yes/No questions.** To get the most of the instructor's knowledge, ask "what do I have to do to make the computer ..."
- **Note-taking.** Some people claim to learn better when they jot down notes. Others find it distracting. The instructor should hand out booklets that outline what is being covered. Transcribing everything will slow you and the class down, and having no notes is fatal. A compromise is to write ideas down in the handouts themselves. Rarely will a vendor ask for the handouts back.
- **Relevance.** As the course progresses, take the examples presented and imagine how they could be made to fit into your work. If you get a good idea, write it down. If you wonder if something is possible, ask the trainer. In many cases, the answer to your question may take too long. If instructors defer questions to a break, be aggressive and don't let them forget. Also, remember: the instructor may not know everything. A skilled trainer will admit a lack of knowledge, promise to get back to you, and then actually do so.

Have Fun!

All of these ideas will help to make the computer course a useful experience. Also, make sure you have fun at the class. This is valuable, as relaxation and laughter let your brain absorb more information. If you have fun, you will associate a pleasant experience with the course and consequently better remember the skills you learned.

How To Remember Complicated Things

To help you remember features of a product, use mnemonic devices. If you have a visual image and story with a function, it helps short- and long-term memory. For example, in Lotus 1-2-3, the function keys all have special names. To remember them, you can make up stories about what each number looks like. Visualize numbers 1 through 10 as:

1 a pen, 2 a swan, 3 open handcuffs, 4 a sail boat, 5 a hook, 6 a golf club, 7 a cliff, 8 an hourglass, 9 a smoking pipe, 10 a bat and ball. Next, have a story to associate with each visual image.

Here's two for Lotus:

Imagine you are out golfing and you make such a bad shot, that you bend the club into a 6 shape and put the ball through a person's WINDOW. That's F6.

For F3 key, you see someone being handcuffed. You want to get their NAME. That's F3.

The memory is strange thing, it is easier to remember more items if they have quirky associations tied in.

Robert P. Ford 604/734-8542

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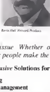

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IBM PS/1 Targets The Home Market

by Lynne Henderson

Product. IBM PS/1, 10 MHz 286 personal computer.

Manufacturer: IBM Canada

Prices: Suggested Retail (dealers may sell for less) Monochrome model, single diskette drive C$1,299; Color monitor single diskette drive C$1,899; Color monitor and 30-megabyte hard drive, $2,649.

Target: The Mass Market

With the new PS/1, IBM has taken a huge leap into the home computer market. According to Bill Machrone, writing in the August edition of *PC Magazine*, IBM has identified an incredible number of households which can afford a PC, as many as 66 million

Research has indicated that this section of the buying public wishes to buy computers as it would a stereo or VCR, namely at a department store which remains open late on Thursdays and on weekends. Studies show that 70% of all home computers are bought at this time (i.e., after work, not on bankers' hours.) Consumers do not wish to spend time at a specialty store. This means that they are still computer phobic and are reluctant to sally forth into new territory They apparently want to buy from stores such as Sears, The Bay and Eatons.

When the PS/1 is turned on, IBM presents the viewer with a four-quadrant screen display. Simplicity is the name of the game Clockwise the user moves the mouse to *Information* (top left) *MS-Works* (top right) *PC-DOS* (bottom right) and *Your Software* (bottom left).

The Information section contains both System and Works tutorials where the most basic applications are explained step by step The new user has the option just to read the information displayed or to do elementary exercises in order to become comfortable with the program.

MS-Works is a bundled with the computer. This program includes word processing with the aid of a spell checker, spreadsheets with varied financial applications such as budgets, flat-file databases and a telecommunications package with the built-in Hayes-compatible modem up to 2400 baud

PC-DOS displays a menu of useful tools known as the DOS Shell. The added feature here is that one can use common DOS commands without having to know more esoteric DOS command language.

Lastly, Your Software allows the user to locate and run his own software. The screen illustrates four areas. Drives, Open Folder, Other Folders and Functions. The software can be organized and customized to fit the user's needs and wants.

On the whole, IBM has crossed its t's and dotted its i's on the new PS/1. It has answered the needs of a newly defined broad-based market. The manuals and literature have ample illustrations which makes for ease of assembly. Even total novices can have the computer out of the box, assembled and running within half an hour.

The terminology is directed to first-time buyers with a modicum of *computerese* under their belts. The cost is reasonable, particularly with the top-end model which includes a color monitor, thereby satisfying many consumers.

IBM in this instance, has undertaken to meet its public in the domain of the Shopping Mall It is rumored that support and services will be heavily promoted with the use of dial-direct 800 numbers that deal direct with IBM, not the retailer if there is a problem.

The Down Side

On the other hand, there are options for MIDI which will cost about $249 but as yet are not available There are memory expansion cards as well as 3 slots for adding adapter cards to the system Unfortunately, these upgrades are limited and the maximum of 1MB cannot be increased. The monitor and keyboard are also bothersome in several ways The screen is fraught with excess flicker unless the Brightness/Contrast controls are muted into opaque tones. Although the keyboard still outperforms many other brands with its good tactile response, the clicking noise generated during extensive word processing is annoying and excessive.

IBM's goal is to become a household word as well as word processor for the 90's. With VCR's, microwaves and camcorders in many homes, the top brass is counting on filling that niche called "indispensable" The PS/1 is not for the aficionado who reads industry mags and attends users' clubs, the PS/1 is clearly a "family" home computer that can satisfy the needs of wives and husbands working after hours outside the office and their children who need educational and recreational software. A success story? Time still tell.

Lynne Henderson is a humanitarian who has spent a number of years working for the Red Cross as well as 10 years selling real estate. She was chosen for this review because of a self-avowed lack of knowledge about computers.

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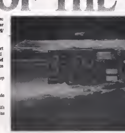

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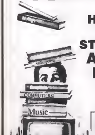

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HOME COMPUTERS

Tandy Introduces Home Computer

NEWYORK, NEWYORK, JUL 25 (NB) —Using a plush New York City apartment as a backdrop, Tandy Corporation introduced the Tandy 1000 RL computer, a system designed to be used in the home. The 1000 RL is available immediately at authorized Tandy dealers and comes in four models with prices ranging from U.S. $749 90 to U.S. $1,299.90.

Introducing the new system, Tandy CEO John V. Roach stressed that the 1000 RL is the first Tandy computer designed especially for the home and that it should be looked at as a combination of software and hardware together rather than as simply a piece of equipment. Roach told the assemblage that the new system user interface is based on a greatly enhanced version of the existing Tandy DeskMate user interface. The enhancements to the system include the bundling of 24 built-in programs, all accessible through DeskMate, to carry out activities which Tandy has determined, through focus groups, are those most desired in a home system.

When speaking of the ease of use of the new system, Roach said: "The Tandy 1000 RL is so easy to use that it guarantees success. Even the novice user can be productive with the 'RL' after just 15 minutes."

In a conversation with Newsbytes, Roach explained what he meant by guaranteeing success, saying: "We have spent considerable time training our entire Radio Shack staff on all aspects of the 1000 RL. We expect customers to have little difficulty using the systems right from the start. If they do, however, the staff of their local store will both be able to answer questions and arrange training classes. If the question turns out to be something beyond the store personnel's knowledge they will have a hot line in Fort Worth to question — and the hot line will be up during U S. store business hours. Additionally, clients with modems will be able to go right in to a Tandy technical information center in Fort Worth for answers. Finally, if we ever have to give up on a user — and we don't expect to — we'll take the system back."

Demonstrating the machine at its introduction, Howard Elias, Tandy vice president of computer merchandising, pointed out that the system does not contain a fan. "We use a very low-power consumption unit and have utilized sophisticated sleep processing to shut down the system itself and an installed hard disk."

Elias then took those present through the 24 built-in programs. The programs are divided into four categories, DeskMate Productivity Programs, Personal Solutions, Kitchen Solutions and Financial Solutions. The last 3 of the 4 categories are all grouped together on a DeskMate screen called Home Organizer.

As Elias went through the applications, which include checkbook recordkeeping, checkbook balancing, diary, expense analysis, travel planning, home inventory, cookbook, grocery list and menu planner, he called attention to the fact that all applications were graphically oriented and were rather intuitive to use. Elias also said that purchasers can utilize all standard MS-DOS software with the 1000 RL and that the DeskMate-compatible versions of Lotus 1-2-3 and Symantic's Q&A fit in most comfortably with the user interface.

Roach also pointed out that the 1000 RL is the first personal computer to receive the Good Housekeeping Seal. Roach then brought in Elias who described the system as an 8086 unit with 512K of random access memory (RAM) and Tandy enhanced graphics.

Ed Juge, Tandy director of marketing information, later demonstrated to Newsbytes that Microsoft Works, a program bundled with IBM's PS/1, loads slightly faster on the 8086-based 1000 RL than on the 80286-based PS/1. Juge attributed the closeness in speed to the fact that "our enhanced graphics adapter, while close in quality to IBM's VGA on the PS/1, operates much faster and overcomes the speed differences between the two chips. The point is not that we're slightly faster but that you have to look at the overall question of which system accomplishes the task better rather than at the isolated technical issues."

The lowest-priced model, at U.S. $749.90, contains a 3 1/2" 720K floppy drive and a monochrome monitor. The same unit with a color monitor has a suggested price of U.S.$899 90. The monochrome monitor version with an additional 20 MB (megabyte) fixed disk is listed at U.S. $1,149 90 while the top of the line 20 MB color unit has a suggested price of U.S. $1,299 90. Contact: Fran McGehee, Tandy, 817-390-3487)

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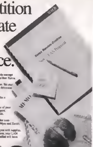

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BUYER'SGUIDE

A Dozen Things You Should Know Before You Buy Your Software

Software Overview For Novices

by Roedy Green

Introduction

The most common phrase you will read in my columns is "Buy your software first."

Most people are under the delusion a computer is something like a CD stereo player. They expect to be able to play any program on any computer. They don't start thinking about software until after they have already purchased the computer. By then it is too late. The software they want may not work on the computer they have purchased, or they may have already blown the budget on hardware and have nothing left for the necessary software.

A computer cannot do anything (except hum) without software. This month I will give you an overview of the various kinds of software.

1. Commercial vs. Freeware vs. Shareware

You buy most *Commercial* programs at a store in a shrink-wrap box. They range in price from $20 to $5,000. If you don't like them, or if they don't work on your particular computer, you are often left without recourse. Usually there is no guarantee and no refund. So, it is important to consult with accountants, salespersons, or people who already own the packages how they like them — before you buy. Another good source of information is software reviews in computer publications. You are not allowed to make copies of commercial programs to pass on to your friends. You are not even allowed to make copies to run on other computers you may own.

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2. Which Word Processor?

Whether you think so now or not, you will end up using your computer for word processing more than anything else. Word processing lets you create letters, minutes, notes, reports, manuals or form letters. The beauty of word processing is that you can go in at any time and make some small changes to your document, then print out a new, perfect copy with the changes seamlessly incorporated. Most word processors will check your spelling. Auxiliary programs, such as Grammatik, will check your grammar, too.

People are fiercely loyal to their word processors, no matter how old-fashioned and slow. It is more likely for someone to change spouses than word processors.

How do you pick a word processor? If you are in an office, you should use the same word processor as everyone else. If you don't, you may not be able to work on each other's documents. Many of the popular word processing programs now let you read and write to the file formats of their competitors. These conversions are not always flawless. It is wise to check them in a "real-life" situation to see how well they work. Try the conversions in both directions.

It is possible to start the equivalent of a religious war in many offices simply by stating that word processor X is better than Y because it has feature Z. So do not be surprised when you find experts who disagree with everything I am about to say.

MS Word

MS Word is a good choice if you plan to do complex form letters. It is also a good choice where you have one expert who can set up complicated macros and style sheets for a group of typists. The unskilled people can get perfect results using only a little cheat-sheet of style codes without having to understand very much of how it all works.

Word For Windows

Word For Windows is a Macintosh-like, mouse-based word processor that runs under Windows. It is one of the simplest word processors to learn, and also one of the most powerful. The big advantage of WFW is that the screen always looks very similar to the final printed page.

In the '70's, comedian Flip Wilson created a character called Geraldine. Her signature phrase was "What you see is what you get!" Computer specialists have shortened it to WYSIWYG (pronounced whizzy-wig) to describe such accurate screen displays.

WordPerfect

WordPerfect is common in lawyers' offices. There is a free-help phone line if you get in trouble. WordPerfect is eccentric in its use of keys. This can be confusing if you use both WordPerfect and other DOS programs. WordPerfect is better than MS Word at handling grids and columns of figures.

XYWrite

XYWrite is common in the book publishing and newspaper industry. It is easy to send XYWrite files directly to the typesetters. XYWrite commands are wordy, but there is a way of creating abbreviations called macros. XYWrite is the fastest word processor, but one of the hardest to learn. Most XYWrite users only tap a small part of its power.

Nota Bene

Nota Bene is XYWrite with a coat of paint to make it friendlier and easier to use. It is popular in the academic community because of the way it can handle complex footnotes, bibliographies, etc.

MS Works

MS Works is a stripped-down version of MS Word. It also contains a simplified spreadsheet, a mini-database, and a modem program. I often recommend it as a starter. You will probably outgrow it after a year and graduate to MS Word or Word For Windows.

MultiMate

Long before the personal computer, Wang dominated the word processor market with dedicated machines. People familiar with Wang systems feel right at home with MultiMate. Most other people find it slow and antiquated.

Desktop Publishing

The distinction between a word processor and a desktop publishing program gets blurrier all the time. Desktop publishing gives you finer control of the positioning of text, a larger assortment of typefaces, and greater ease mixing text and graphics.

Ventura is the most popular program for books and reports. PageMaker is better for short newsletters and advertisements. Professional desktop publishing requires special large-screen displays, fast computers, and high-end PostScript laser printers. However, you can dabble with it on small computers using an inexpensive program like Finesse.

3. A Text Editor, Too?

A text editor is a stripped-down word processor. It cannot do bold, italic, etc. You will need a text editor to edit the plain ASCII files such as AUTOEXEC.BAT and CONFIG.SYS or other *.BAT files that you use to kick off your various programs. In a pinch, you can use your word processor. If you are going to be doing a lot of such work, you might like a tool fine-tuned just for that job.

I use the *Norton Editor NE*. *QDOS* DOS shell comes with a little editor called QED. Brief is a fancy editor for professional programmers. DOS comes with the world's worst text editor, called EDLIN. PC Write and QEDIT Advanced are shareware that will serve as both a text editor and simple word processor.

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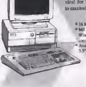

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Ted and VDE. Microsoft has promised to include a simple text editor with the new DOS 5.0.

4. Backup!

In the July issue of *The Computer Paper*, I devoted a whole column to backup software. Backup is absolutely mandatory. Running without backup software is like skydiving without a parachute.

5. DOS Shells

DOS was conceived back in the days when everyone who used a computer was also a computer programmer. DOS has not changed much since. When I teach courses on DOS commands, the students often look at me as if I were joking when I explain the peculiar "gotchas" of some of the DOS commands. In a word, DOS is unfriendly.

A DOS shell is just a computer program that acts as an agent to shield you from DOS. It talks to you in some reasonably sane way, then it does its best to translate your requests into the arcane forms that DOS likes.

Using a DOS shell, in under a day, a rank novice can learn the basics of creating, deleting, copying, moving and viewing both files and directories. However, even after a week of instruction, most novices attempting to do the same thing in raw DOS are still befuddled.

Popular DOS shells include QDOS, XTree Pro, Norton Commander and PCTools. XTree and Treeview come in shareware versions. I usually recommend QDOS to start because it is the fastest and simplest. The myriad features of the fancier packages often overwhelm novices.

Magellan

Lotus Magellan is a DOS shell, but it does much more. Magellan is like a secretary who remembers where you put *everything*. You don't have to remember the cryptic names of the directories and files. You just give Magellan some vague hints, and in a few seconds, it produces a list of candidate files — including some related ones you had forgotten all about.

With a single keystroke you can instantly look at each file, whether it is a word processing document or a spreadsheet. With another keystroke you can start up the appropriate word processor or spreadsheet program to edit the file.

You can use Magellan to create new files by pasting bits together from others. Magellan can also let you store your files in compressed form, which saves disk space. Magellan has one major drawback — on ordinary tasks such as launching a program, or deleting a file, it is much slower than its competitors.

Magellan lets me automate all kinds of boring tasks in ways I never thought would be possible. Every day I find new uses for it.

Windows

Windows 3.0 may be one of the most hyped programs of all time. You can look at it as just an elaborate DOS shell. It acts as a platform for other software programs, providing a rich environment for other programs to run in.

Ordinary programs can usually run under Windows, but there is not much advantage in that. Only special Windows-aware programs can take advantage of the mouse, windows, menus, multiple typefaces, standardized printer and screen drivers, and especially the enhanced access to a huge RAM memory. If you have enough memory, you can even run several programs simultaneously, though they may run more slowly than if you ran them separately.

You can dabble with Windows using a smaller machine, but to use it seriously you should have 4 MB RAM and at least a 16 MHz 80386 SX computer to run best.

Even if you could squeak by with a 2 MB RAM, it would not be wise. Why? Every month programs get bigger and bigger. Having extra RAM installed when you buy your machine will cost you little extra when you purchase a computer, but later you would have to pay installation charges which could be larger than the cost of the extra RAM itself. Experts can tweak and tune their machines to extract every last byte of performance out of it, but if you lack this expertise, throw a bunch of RAM at it and watch it fly anyway.

There are only two Windows spreadsheets today, Excel and Wingz (just announced). You have a choice of four word processors today, WFW, Ami, Ami Pro or Legend. Many super VGA cards will not yet work properly in high-resolution 256-color mode in Windows. One notable exception is the Video 7. However, the future for Windows looks bright. Not only the marketing people, but the technical people too have hailed it as a tour de force.

6. What is A Spreadsheet?

Spreadsheets were originally called "Magic Blackboards." They are like a blackboard with a superimposed grid. In each square you can write a number. In some squares, instead of a number you write a formula, such as "this cell contains the sum of the five cells immediately above it." Then later when you change any of the numbers, the formulas automatically recalculate to display the new sums.

How would you use a spreadsheet to help prepare your income tax? If you

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made a correction to one of your deductions, the spreadsheet formulas would then automatically propagate the change throughout all the affected sub-totals — right down to the bottom line of how big your refund should be. You can play "what if" games. What if I deducted Granny as a dependent? What would happen if I got a $200-a-month raise?

Lotus 1-2-3 was one of the first spreadsheets. It is still the best-known and bestselling. It has maintained its early lead by endearing itself to corporate users. Lotus has been stable so that users need not make any changes to their spreadsheets when new Lotus 1-2-3 versions come out. Lotus runs on many other computers besides IBM clones.

There are two versions of 1-2-3: fancy (version 2.2) and extra-fancy (version 3). Version 2.2 can squeak by with a megabyte of RAM. Version 3 requires 2 MB RAM to run comfortably. It is designed to work with a 25 MHz 80386 DX. Few people ever learn to use the advanced features of version 3.

Version 2.2 wants only expanded RAM. Version 3 wants only extended RAM, and will not tolerate the presence of a memory manager like QEMM. Later in this article I will cover RAM memory managers.

Lotus's many competitors are superior in different ways. VP Planner, written here in Vancouver, is much less expensive, and runs quickly even on small machines. Microsoft Excel runs under Windows and produces graphs that you can import into other Windows programs. Borland Quattro Pro is a nimble spreadsheet that has advanced "what if" features to try out various possibilities automatically. It also prepares graphs that rival Harvard Graphics. SuperCalc 5 excels at 3-D. *PC Magazine* reviewed spreadsheets in the April 24, 1990 edition.

If you decide you want to switch spreadsheets, you do not have to start all over. Competitors often offer tools to convert your spreadsheets to their format.

Lotus has been successfully fighting back at its competitors by slapping them with lawsuits claiming their products look and feel too much like Lotus 1-2-3. The irony is, Lotus is itself a carbon copy of an earlier spreadsheet called VisiCalc.

7. So You Want a Database?

A database is just an automated filing cabinet. Just as building your own house is a undertaking only for the exceptionally intrepid, building a custom database program is best left to professionals.

You have a good chance of success building a database of only a few hundred records, but when it gets larger, the thing will probably collapse under its own weight.

A few errors in a small database are easily corrected manually. That same error rate in a large database makes it unusable. One of the easiest ways to construct a small database is to use a spreadsheet, especially one with database extensions such as VP Planner Plus.

I write my programs in BBL/Abundance, though other programmers may choose C, dBase IV, Foxbase, Paradox, Revelation, etc. If you hire a professional to write a custom program for you, allow him to use the tools he is familiar with.

8. Modem Software — a Window on the World

If you have a modem, you can dial into the global electronic conferences like BIX, Suzy and Compuserve, and local Bulletin Board Systems (BBS's) too. There you will meet experts who will give you free advice on every topic under the sun. You will need some sort of generic modem program to get you going. Shareware Telix, written right here in Canada, is the one of the better shareware telecommunications programs available.

Unicom is a shareware telecom program that runs under Windows. It is still a new program, but it shows promise. Other commercial telecommunications software offerings include: Crosstalk IV, Crosstalk for Windows, and Procomm Plus (formerly shareware).

9. Do I Need A Memory Manager?

If you have 2 MB or more RAM and you have an 80386 SX or DX, you need a memory manager. Memory managers are hard to understand because they do so many different things. The two most popular are QEMM and 386Max.

Memory managers ensure that two different programs don't try to use the same piece of RAM at once. They also play fancy games with advanced memory-mapping features of the 80386 chip to free up more room for your programs to work in.

The most important thing a memory manager does is convert some of your extended RAM into expanded RAM. This implies there is not much point in having a memory manager unless you have a megabyte or more of extended RAM.

In the August issue, I explained the difference between conventional, expanded and extended RAM using the tapestry analogy. Some programs such as Lotus 1-2-3 version 2.2 cannot use extended RAM directly. They need it predigested as expanded RAM.

A computer has 640 K of conventional RAM. Above that is a 384-K hodgepodge. Some shadow RAM is in that region. The video RAM that describes the picture you see on your screen is in there. The BIOS program that controls the keyboard, disks and screen is in there, but mostly it is just empty space.

A memory manager can find the little pockets of empty space in this hodgepodge region and back-fill them with chunks of extended RAM. Then later it looks for device drivers and small TSR (pop-up) programs, and instead of running them in the main conventional memory, it stuffs them in one of the pockets.

Why is this a good thing? This frees up your conventional RAM to run really big programs. It also gives ordinary programs more room to breathe so they run faster.

Last month I talked about shadow RAM and how the invisible extra 384 K speeds up your BIOS. Normally, about 320 K of the shadow RAM goes to waste. A memory manager recycles the wasted shadow RAM.

QRAM and Move'Em are memory managers for 80286 computers. However, the 80826 cannot pull off nearly as many tricks with memory as the 80386 SX or DX. If you have the Chips and Technology NEAT chip set hardware on your motherboard, then a memory manager can convert some of your extended RAM to expanded for you and can recycle some of the shadow RAM.

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caching, they usually overlook the cheapest way to a meteoric hard disk.

First, let us clear up the distinction between the two kinds of caching: static RAM caching and disk caching.

For $800 you might buy a 32 K *static RAM cache* option to go between your RAM and your expensive 33 MHz 80386 DX CPU. The purpose of this the fast SRAM cache is to hold duplicates of the numbers that the CPU most frequently examines, so that the CPU does not have to wait to get them from the slower RAM. The CPU can fetch a number in 25 nanoseconds (billionths of a second) from the SRAM, but it takes 80 nanoseconds if it must get it from regular RAM. Static RAM cache thus speeds up calculations. It has no effect on the disk. Heavy-duty applications like AutoCad and PageMaker desktop publishing benefit most from SRAM caching.

For $90 you might buy one megabyte of extended RAM to use as a *disk cache*. On a per-byte basis, static RAM cache is 284 times more expensive than disk cache. Knowing this will motivate you never to confuse the two again. You then need a utility program called a disk cacher.

The purpose of the disk RAM cache is to hold duplicates of the parts of the data the CPU most frequently examines, so that the CPU does not have to wait to get them from the much slower hard disk. The CPU can get information from RAM in microseconds (millionths of a second), but it takes a thousand times longer to get it from hard disk.

Data base programs and spell checking benefit most from disk caching, though nearly every program will show some improvement.

Multisoft PC-Kwik is the most respected commercial caching utility. It can exploit any combination of conventional, expanded and extended RAM. Peter Norton has just announced a caching program. AdCache is the best of the shareware cachers, though it can handle only expanded RAM. EMMCache is free, but it cannot handle DOS 4.01 style large disk partitions.

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11. What Is A Defragger?

DOS is about as good a housekeeper as Peg Bundy on *Married With Children*. If you use a tool such as Norton NU, you can see how she scatters files and directories haphazardly all over the hard disk. One chunk of a file might be near the outer rim, and the next piece near the centre "beach," and the rest broken into little fragments scattered like confetti.

When you go to use the file, the disk arms must thrash back and forth over the hard disk finding all the pieces. This slows things down.

Also, DOS does not like to take out the garbage. If you closely examine a directory, you will see it is clogged with remnants of old files you deleted months ago. Further, DOS keeps her directories of files in higgledy-piggledy order.

A defragger is a maid — a housekeeping utility to run after your daily backup to tidy up after DOS. It sorts the directories alphabetically and squeezes out the old deleted files. It moves the directories to the prime real estate near the outer rim next to the FAT — the File Allocation Table – which is the master table recording which parts of the disk are in use and by whom.

Then it collects all the fragments of each file together in one contiguous piece, placing related files side by side. The first time you run a defragger the result is dramatic. Your machine feels full of pep. Subsequent uses do not have as much effect because your disk is already mostly tidy.

ORG is the fastest defragger. Mike Grevé of Switzerland wrote it as shareware. PCKwik Power Disk is a fast commercial defragger. The Advanced Norton Utilities come with a pair of utilities called DS (Directory Sort) and SD (Speed Disk) that together do the defrag slowly but surely. PC Tools has a program called Compress. Paul Mace calls his Unfrag. Gazelle has Optune.

12. DOS 3.3, 4.01?

Before your computer can do even the most basic things, like accept a keystroke, paint a character on the screen, or read the floppy disk, it must have two programs. One is called BIOS, which comes burned into silicon EPROM chips on your motherboard. The other is called DOS, which comes on floppy diskettes.

Microsoft makes a version called MS DOS, and IBM makes a version called PC DOS. The two are almost identical.

Every year or so, they jointly issue a new version. DOS 5.0 will be next. DOS 3.3 and DOS 4.01 are most common right now. Which should you use?

If you put a group of DOS experts in a room and bring up this question they will soon be at each other throats. My short answer is, first timers with hard disks under 70 MB should probably stick with MS DOS 3.3, and advanced users who have disks over 100 MB should go with MS DOS 4.01. MS DOS 3.3 is increasingly rare, and may cost you more money. Microsoft has officially announced that they are not making it any more. Most new computers are being shipped with MS DOS 4.01.

The Case For DOS 3.3

DOS 3.3 has been around for a goodly while. It has few bugs and those it does have are well understood. All programs will work fine under DOS 3.3.

The Case Against DOS 3.3

DOS 3.3 is rather clumsy handling very large hard disks and it has been discontinued by Microsoft.

The Case For DOS 4.01

DOS 4.01 allows you to treat a giant 150 MB drive as one big piece. If you used DOS 3.3 you would have to split it into 30 MB fragments called partitions. If you have expanded RAM, DOS 4.01 can exploit it by putting DOS buffers and FastOpen caching in it, thus freeing up your conventional memory. If you have IBM brand equipment, you should use IBM PC DOS.

DOS 4.01 contains a number of small improvements, such as a better method of detecting when you have changed floppy diskettes and of allowing you to put remarks in your CONFIG.SYS files.

The Case Against DOS 4.01

DOS 4.01 is larger than the other DOS versions, leaving you even less room for your programs. However, if you have expanded RAM, DOS 4.01 can grow into it, thus having minimal impact on your programs.

The DOS 4.01 install can occasionally be complicated and time-consuming. Some users may find the DOS 4.01 shell program, that by default takes over, is too slow and confusing to be useful.

The Future of DOS

When DOS 5.0 finally comes out, it will be leaner and faster than DOS 4.01, which means there will be more room for your own programs to run. It will also be more configurable, so that experienced programmers will be able to prune out the parts of it that you do not need. Microsoft is currently *beta testing* DOS 5.0. It is not yet publicly available.

Access

Any computer dealer will be able to get you any of the commercial programs I mentioned in this article. You can find all the shareware and freeware on the BIX electronic conference. Much of it is also available on local bulletin boards or from the Vancouver PC User Society at (604) 734-0060.

Acknowledgements

This article was an international collaborative effort. Using the BIX electronic conference, the following people helped gather information and weed out errors. From Ontario, Canada: David Dunfield and Michael Sargent. From Switzerland Jens Augustiny, Jan Sinstadr and Mike Greve. From the USA, Randal Barnes, Michael Covington, Ward (XModem) Christensen, Sean Curry, Ira Emus, Jeff Goldberg, David Harvey, Martin Heller, Terry Hoffman, Thomas Jones, Ross Nelson, David Nye, Joanne Shortell, Jay Vanderbilt and Dave Williams.

Roedy Green is president of Canadian Mind Products a company that sells and installs AT computers and software. You can reach him at Canadian Mind Products, #168 - 1020 Mainland Street, Vancouver, BC, Canada V6B 2T4, (604) 684-6529

Roedy is offering one-day overview courses on computer software. The first will be on Saturday, September 15. Call 684-6529 to register.

NETWORKING

X.400 E-Mail As Easy as Fax?

by Cathalynn Labonte-Smith

From LAN to WAN

What do you do with electronic mail (E-mail) gathered from a local area network (LAN), that needs to be sent across the office, block, city or globe to a dissimilar computer system? As old-fashioned mail is sent to a post office, E-mail can be sent to an electronic post office (E-post office), then sent through a gateway (or bridging) program like X.400 (an electronic envelope stuffed with E-mail) to a mainframe, to be sorted in bulk and sent on to its final electronic address.

Consumers Software is the only LAN E-mail vendor to provide X.400 connectivity ,through its Network Courier 2.0 software, which will soon be updated with the 2.1 version with character formatting (e.g., underlining, bold) added. Consumers Software is the first vendor to offer a Windows 3.0 interface called Winmail. (You can also use other interfaces like Macintosh, character-based DOS, OS/2 and Lotus.)

In an interview with Mike Shandrick at their headquarters _ which is growing like yeast in sugar water— he described Consumers Software's role in the new E-post office technology like this:

MS. It's like a rural delivery, someone walks the mail to the local post office, it's sent to the General Delivery, main city center post office and then it's distributed.

TCP: To their central post office and then it's sorted. . .

MS: And then it's delivered. In the simplest terms, that's how it works. The reason X.400 is popular is largely because you have many different mail systems within a corporation. What many companies do, is use them for intra-company communications.

TCP: Like memos?

MS: The users will have different mail systems in different departments, and it could be a very large corporation and have thousands and thousands of users. So they bridge it — so this can be wide area communications — from one end of the country to the other, or you can have it within a company, and you have different parts of the company with different E-mail systems.

TCP: Are you talking in the same location?

MS: Yes, a campus or a large corporation, that uses different mail environments, they would use X.25 to link these different departments.

TCP: X.25 is similar to X 400?

MS: That's the leased line, the communications platform which then takes the packets of information and intersperses them. You don't pay for the time, as it's sent in packets. In an environment like this, X.400 is the bridge between all of these environments. In this case, the X.400 Gateway on a Network Courier system, the gateway software resides on the LAN. The post office resides here [on another terminal next to the LAN dedicated terminal] now they're all Network Courier. You have a post office here, a post office here, etc., all sending

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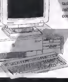

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6	9,910	10,408	26	37,080	39,620
7	11,107	11,733	27	38,331	40,943
8	12,297	13,060	28	39,521	42,264
9	16,155	17,135	29	40,712	43,586
10	17,387	18,450	30	41,892	44,906
11	18,567	19,784	31	43,082	46,225
12	19,809	21,104	32	44,282	47,548
13	21,010	22,425	33	45,504	48,869
14	22,242	23,757	34	46,747	50,190
15	23,422	25,078	35	47,937	51,511
16	24,874	26,400	36	49,117	52,832
17	25,854	27,731	37	50,358	54,145
18	27,106	29,062	38	51,548	55,470
19	28,287	30,374	39	52,740	56,795
20	29,510	31,695	40	53,872	58,118
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mail to only one X.400 gateway. These others are what we call downstream post offices, addressing components, so we only need one X.400 gateway to bridge that whole network, but if there are other mail systems (if every post office has a different mail system), then you have different MTA (message transfer unit) — in that case, you use X.400 to bridge these different mail systems.

American Airlines is very much like this, they have different mail systems throughout and they will have up to 14,000 people using different mail systems in different locations across the USA, even within their own organization, so it may be Network Courier here, Data General here, DEC here, then they have a LAN with another mail system here, and over here maybe PROFS, so they're using X.400 to connect those very different environments to send messages back and forth.

Issues Raised.

X.400 offers great potential, but there are issues raised.

Addressing the complex 80-character address string required to send E-mail through X.400, may be intimidating to potential users, however Consumers argues that this system could be quite manageable after the initial entering of the addresses and aliases. The network administrator, a clever end-user or even Consumers Software could enter the address protocol and then all the user ever sees is a simple list of networks and the individuals' addresses on that network.

True, once the addresses are assigned all the user has to do is select the alias on the menu totally insulated from any complexity, but is it as easy to maintain as Consumers claims? Long, complex address would seem to increase the possibilities for errors. If the user had Consumers do the initial addressing, how will they deal with updates and changes made to the original address aliases to be sent to the main database? A less convoluted method would encourage users to install this system. Consumers Software is composing a directory of all the addresses included in their system, which brings us to the next topic: X.500.

X.500

X.500 is the equivalent of a phone book _ an E-phone book that will be a companion to the X.400 addressing system. When you think of how such a directory could be useful, think of telephone directories and how often you need to pick them up. Will X.400 provide a directory that a user could query? A directory assistance service when there is a new number? The possibility exists for frequent updating, because of its electronic form, but it just may be impossible to keep up with new addresses, especially since X.400 is still in the initial stages. X.500 has been in composition for quite a few years. Consumers will offer the first available commercial use of X.500 in North America, and they're creating a user's manual of X.500 terminology. X.500 will be a very valuable business tool as far as providing an accessible global market.

X.400 vs. Modems

What advantages does X.400 offer users over modem-to-modem communication in a WAN?

1) Store-and-forward technology — X.400 can send out any number of messages simultaneously, or at individually specified times, after they have been selected from the address menu, without tying up telephone lines.

2) Leased lines - using the X.25 leased lines, the user pays only for the number of messages, which are sent in packets, instead of paying for the time the transmission takes, avoiding costly toll charges and hardware like FAX and telex machines, and their maintenance, or even saving the cost of having a modem in each terminal.

3) Security and integrity of data — When you send messages through X.400 the inherent security in the E-mail program is maintained, including features like password protection and inscription schemes. Also, you can only transmit your messages to specific addresses instead of having your message hop from terminal to terminal looking for a free line. You may also send messages as registered mail and the program will return with the time the mail was opened, so you can be sure that your private messages are received.

Start up costs of X.400

The initial costs of X.400 for a multiple LAN environment are about $3500. This would include Network Courier Internetwork software from Consumers and the X.400 gateway software; then all you would need to add would be a dedicated terminal, then perhaps you would have to add the monthly charge of an X.25 leased line if the volume of calls is sufficient and for external messaging a charge for public carrier like Envoy 100 (Canada) or US Sprint (USA).

For one network E-mail system in an organization with an external messaging, the user could buy Single Network version for $695/network. Other gateways besides X.400 could be added if necessary, like PROFS (IBM's large host-based E-mail), Unix-based SNTP (for Unix), MCI, SNADS, and even FAX.

Will X.400 Catch On?

In July, Consumers Software in conjunction with US Sprint and Eicon Technology of Montreal launched a series of seminars on LAN-to-WAN Global Connectivity in seven major U.S. cities: Chicago, Dallas, San Francisco, Los Angeles, Atlanta, Washington, D.C., and New York. The purpose of these seminars was to woo major corporate and institutional players over to X.400. This was their first major step onto that vast satellite of consumers, who orbit in interest around the strong pull of their telecommunications technology.

Consumers Software has a reliable, attractive, cost-saving line of products, so their future success will depend on a solid marketing strategy in a very competitive field. If the trend continues toward global communications, and if companies continue to decentralize into telecommuting nodes, X.400 will be ready to provide the means to these trends.

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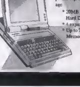

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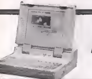

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HARDWARE

Everex Excel Stream-125 Tape Backup

by Daniel Werger

Product: Everex Excel Stream-125 streaming tape backup unit.

Price: Backup unit with controller and 1 DC600A tape $2695, DC600A tape cartridges $65

I consider myself fairly normal, and normal people do not read manuals. I unwrapped all the bits and pieces, opened my PC, found one last slot and carefully inserted the interface card, connected the power and cables, closed my eyes and turned on the system. No smoke — no sparks. Good sign! Installed the software and ran "TAPE". Software runs and a menu appears.

I selected install/config from the main menu and then discovered that I should have installed the software first to check the dip switch and jumper settings. No harm done — just meant pulling the interface card out and checking the settings.

If I had been astute, I would have known which IRQ's, DMA's and ports were appropriate to use. But I wasn't, so I used the defaults and ran the tape system test (also in the main menu). I got an error immediately. No cartridge in the drive!

This was the only time I had trouble, I couldn't figure out how the tape actually mounted into the drive.

At that point I read the manual from cover to cover and nowhere did it tell me how to put the tape in. Finally, logic dictated that since there were no levers, doors or latches it must get sucked in somehow. I finally remembered using a streaming tape drive years ago on a Unix mini, and with the right amount of pressure the tape locked into place. At last the drive made a chipmunk sound and it works!

At this point, everything is loaded, I've run the streaming tape software by typing "tape", and I'm looking at the main menu. There are nine menu items, the top six are divided into three columns of two selections each. The middle column is titled "backup." There you choose to back up on to tape either an "image" or "by file." Image refers to a full end-to-end snapshot of a logical drive such as c: drive.

The sub-menu asks for the disk drive letter and whether you want to append or overwrite the tape. Selecting F8 begins the process and a second prompt checks to make sure you want to overwrite the contents of the tape. Very simple!

A panel appears at the bottom of the screen and a black bar progresses from 0% to 100% indicating the percentage of backup completed. Also displayed is information about the tape and the current "dataset". Each backup performed has a header which contains information about type of backup, dataset number, total size, date, time, etc.

When the backup is complete, it is a good idea to move to the left column of the main menu and do a "compare." This function reads the data off the tape and compares it to the data on the hard disk. If a discrepancy is found, it is reported and you would choose to re-do the backup or ignore it. Once your backup and compare are complete, you can confidently delete those files from your hard disk.

When you need a file to be restored, just load the backup tape, run the "tape" program and go to the right column, which is for restoring a full "image" or selected files.

Finally, a streaming tape drive has more uses than just system backup. It can be used as a third storage medium (the other two being floppies and hard disks) and archiving data which is not needed on a day-to-day basis, but can be restored quickly when needed.

One of the great advantages of a removable storage medium like streaming tape is that it's physically separated, which makes cataloguing easier. The Everex Stream-125 is an excellent device. Installing hardware and software is a breeze. The documentation could use a little work, but overall it's adequate.

If you're looking for a backup unit for a network, this device is sturdy enough to handle the volume and the abuse. If you're looking for a unit to be shared amongst many stand-alone users, this device is simple enough that even the most technophobic user can do regular backups himself without much handholding. So, given the increasing size of hard disks these days, can you continue to ignore the probability of disaster striking your system?

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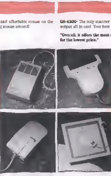

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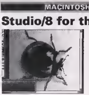
MACINTOSH GRAPHICS

Studio/8 for the Macintosh



reviewed by Graeme Bennett

Product: Studio/8 1 1
Publisher: Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404 415/571-7171
System Requirements: Mac II or SE/30 series computer with at least two megabytes of RAM, hard disk and 8-bit color board. Not copy protected.
Price: $495 US

The Macintosh, with its mouse and Graphical User Interface, almost single-handedly changed the face of computer graphics, largely due to Apple's decision to include "bundled software" with the machine. Every purchaser of the original Macintoshes received a word processor called MacWrite, and MacPaint, a bit-mapped graphics program. It was these programs that amply demonstrated the computer's ease-of-use and power to integrate text with illustrations, charts or logos. Best of all, this power was obvious, intuitive.

The Macintosh seemed to encourage creativity, and Apple spread the message: If you can point, you can use a Macintosh. More than any other program, MacPaint exemplified that message. After a few clicks of the various MacPaint tools, the answer was clear: Computers could *indeed* create art.

Beyond MacPaint

When MacPaint was released, it established a set of standard graphics tools known as a toolbox that has become common to many Mac applications. Such tools as the pencil, eraser, paintbrush and spraycan had uses that were immediately obvious to the artistically inclined, if not everyone. These, and the other tools of the MacPaint Toolbox have become a de facto standard for user-interface design of many Macintosh programs.

Of course, when MacPaint was introduced, there were no color Macintoshes. But since April, 1987, when the Macintosh II was introduced, color has been growing in both importance and capability on the Mac desktop.

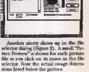
Studio/8 is what is referred to as an "8-bit" color paint program. This means that, unlike MacPaint's 1-bit (monochrome) bitmaps, the paintings created by Studio/8 can have as many on-screen hues as "2 to the power of 8," or (2*2*2*2*2*2*2*2=256) colors. Two and sixteen color modes are also available. These colors can be chosen from the Macintosh's 16 8 million-color palette.

One question that must be considered, though, is why should anyone invest in an 8-bit color program, when the trend in Macintosh graphics is toward 24-bit "true color"? Even if you have an 8-bit video card now, you can still use a 24-bit color paint program such as Adobe Photoshop or SuperMac's PixelPaint Professional.

In defence of Studio/8, I have found that in practice it *feels* better than most other Mac graphics applications. It is a decidedly artistic tool that many graphics aficionados will prefer over programs with more color capacity.

Keyboard Shortcuts

When you open Studio/8, you'll immediately notice many familiar MacPaint-style tools in the tool palette at the left side of the screen. What isn't immediately obvious is that many of these tools have pop-out sub-palettes that can be "torn off" and placed anywhere on your screen. The rectangular color selector box in the lower left corner of Figure 1 is one of these tear-off palettes.



Another nicety shows up in the file selector dialog (Figure 2). A small "Picture Preview" is shown for each picture file as you click on its name in the file selector. Note the actual image dimensions listed below the picture.

One of my favorite features of Studio/8 is that virtually every tool can be accessed with a single-key keyboard shortcut. This may be a concept inspired by EA's groundbreaking Deluxe Paint program for the Amiga Apple IIgs and IBM, where B is for brush and F is for fill (etc.), or it may simply be common sense.

While the thought of a keyboard-intensive paint program may seem an unlikely advantage, in use it is a dramatic improvement over the typical approach of using Command-B for this and Command-F for that. This is one area in which Electronic Arts should be commended for daring to deviate from the standard. It should be noted that several commands are accessed with the numeric keypad, therefore users of Apple's EASY ACCESS utility should turn it off to avoid conflicts.

Studio/8 loads MacPaint, PICT and TIFF files, and saves in color PICT and color or gray-scale TIFF formats. It comes with five disks: program, fonts, textures, brushes and backgrounds, and a slideshow called Gallery that allows you to assemble customizable presentations with a variety of dissolves, fades and wipes.

Several example pictures show off the various possibilities. One picture is of a lighthouse, and using a technique known as color cycling, the scene can be made to animate! Color cycling is a very easy and fun type of animation, appropriate for images like rain falling, water flowing, tires rotating and other types of repetitive motion.

A snapshot FKEY called ColorCam is

also provided to allow you to easily grab screen images from other programs.

Highlights

There really isn't room in this review to give a blow-by-blow account of all of the features of Studio/8, so I'll stick to the highlights:

1) It comes with a great library of useful brush-shapes and backgrounds such as clouds, wood, satin, marble and granite. These are well-executed 8-bit PICT images and have proved to be extremely useful as backgrounds in other programs too.

2) The well-written manual is an impressive-looking hard cover book. (Shouldn't programs that cost this much money *all* have this quality of manual?)

3) The gradient fill tool is simply the most elegant one of its kind that I have ever seen. Of course, I just *love* those gradient fills!

4) Studio/8 is justly famous for its masking functions which allow you to mask selected objects or the last object created; to mask individual colors or ranges, or even to save the masks for later use. With masks, you can easily create solid objects with airbrushed textures and other layered and stencil-type effects.

5) My favorite feature though, is Define Perspective/Plane. By setting the angles of perspective of a small grid, you can map any selected object onto a perspective plane. Indeed, you could fill the entire plane with a marble texture to create an elegant "floor"!

Overall, it is the "feel" that distinguishes Studio/8. It feels comfortable and quick, like a good pair of sneakers. It is also fairly easy to learn, and many will find the PICT textures, backgrounds and brushes to be terrific additions to their publishing arsenals.

Wish List

Studio/8 does not directly produce color separations, so if you want to publish your color masterpieces, you'll need to import them into Quark XPress or Aldus's new Separator utility for PageMaker. Photoshop, ColorStudio and a few other "high end" programs can also produce color separations.

Nevertheless, I was able to open several full-color pictures simultaneously. Macintosh users with less copious amounts of RAM will probably not notice this slight anomaly. As always with Multifinder, increasing the application memory size helps.

Other EA offerings

Electronic Arts also has a monochrome program (intended primarily for the small-screen Macintoshes) called Studio/1 that shares many of Studio/8's features and commands. Studio/1 includes sound and animation features not present in Studio/8.

EA has shown beta versions of their next-generation 32-bit "true color" paint program called Studio/32, that supports the full 16.8 million-color palette of the Macintosh. It is expected to compare favorably with 24-bit color programs like PixelPaint Professional and Adobe Photoshop. Look for a review of Photoshop and Color Studio in an upcoming issue of *The Computer Paper*

MS-DOS SOFTWARE

Info Select

Info-Select

by Robert Tarrant

Product Info-Select — is a program for tracking random information.
Publisher Micro Logic Corp , POB 174, 100 Second St , Hackensack, NJ 07602, USA
System Requirements IBM PC, PS/2 OR IBM Compatible
Price $99 US

Database or Word Processor?

Have you ever tried typing information straight from a phone conversation into a database? You will often have to ask the caller to wait while you decide how to categorize the data, find the appropriate field, and then key in.

It can be frustrating even after a lot of practice. This is because most information coming in from the real world is random, while the database will accept only structured information.

It would be much easier to type the info straight into a word processor. But after a while this can become just as frustrating. How will you find a particular conversation that was recorded months ago amongst hundreds of others?

A Hybrid

Several years ago a little program called Tornado Notes came on the market to solve the problem of tracking random information. It feels like a word processor and acts much like a database— only it's easier to use. Tornado's descendant, Info-Select was released several months ago for the same price. It does everything Tornado does and more.

You can load Info-Select as a regular application or as a TSR. If you want to store a lot of data in it then I suggest you use a little utility program that comes on the same disk called SWAPIS made by Innovative Data Concepts. This swaps Info-Select between RAM and your hard drive-reducing Info-Select to less than 7K of RAM when not in use. Unfortunately it takes 7 seconds to load on our Novell Network and sometimes just hangs up the work station.

Easy Entry

Installation is easy and you can customize the color scheme and a few other features. You can make use of it straight away using only a few commands. For example, if you load Info-Select as a TSR, you could be working at your word processor when a caller phones. To record any kind of information, just hotkey into Info-Select and press "N" (for "New Window"). This brings up a little blank window where you can type in whatever you want in whatever order you want to

CONTINUES ON PAGE 50

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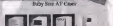

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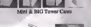

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SHAREWARE SHELF

Tribute to Canadian Shareware

by Gord Simmonds

Canadian authors have arrived en masse during the past few years to shareware marketing (try before you buy) Their programs are diverse and cover the spectrum of software classifications available to users. We will review just some of the many programs available

Canadian Payroll

Businesses will be happy to know that Anthistle Systems & Programming Ltd., of Oakville, Ontario have produced a comprehensive payroll program, *Payroll Canada* This program handles multiple pay frequencies including weekly, bi-weekly, and monthly Multi-company payroll is also featured, and *Payroll Canada* handles 1 to 2000 employees.

Anthistle claims their program interfaces with any accounting system and will maintain employee info, calculate pay and taxes, print cheques or payslips, cheque and payroll register, summary journal, PD7AR, T4, and pay history for UIC ROE forms. *Payroll Canada* will export to Lotus, Quattro, dBase and other programs. Requires a hard disk and 355K memory to run.

Telecommunications

Communications packages include *Telemate*, written by Mr. Tsung Hu, of Windsor, Ontario. It is a flexible communication program with an integrated environment (no need to use a separate editor, viewer or mouse driver) accessible through menus and windows. Multitasking features and mouse support are built-in Other features include Back Scroll, Clipboard (for cut and paste), and built-in protocols such as Zmodem, SEAlink and CompuServe QuickB.

Not only does *Telemate* contain a script language (for automating routine tasks at a keystroke), but a "Learn Script Mode" that can generate script files for you. *Telemate* supports almost all video adapters (from Herc to VGA) and EMS 3.2 or 4 0 as virtual memory to store data (up to eight Megabytes). *Telemate* even allows you to replace that annoying buzzer alarm music from a menu of songs, and contains a comprehensive telephone directory

Games

Excellent games have been written by TEGL Systems Corporation, Vancouver, to show off their Graphics User Interface (GUI) program for C. They have written versions of Monopoly and Mille Bornes that make the original games appear mundane. Monopoly comes complete with a paddy wagon to scoot you off to jail, and now you can play 'solitaire' Mille Bornes against an opponent that can lose.

It's refreshing to play against a computer that doesn't cheat. I was able to stop the computer with a flat tire for the entire game, and it doesn't always get the "Right-of-Way" card.

TEGL also distributes versions of Klondike Solitaire, Mahjong Solitaire and Big 2, all with the fantastic graphics & full mouse support available with their GUI program.

Gord Simmonds is the owner of SIM-COM Services (854-DISK), a company in Abbotsford specializing in shareware products

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INFO-SELECT

CON'T FROM PAGE 47

type it. Then type [Esc] twice to put this new window on top of the stack with any other windows you have and hotkey back to your word processor. Nothing to it.

Even Easier Tracking

Your caller may phone several times over the next few months. At any time you can get a record of all conversations you have had with that person almost immediately, like this... After hotkeying into Info-Select, type "G" (for "Get"), then the caller's name. All windows with that name in them will appear on the screen.

If there are too many to fit on the screen together, you can move through this pile of phone notes one at a time by using the Down and Up Arrows. Then add new notes and put them all back in the original stack by just escaping to your word processor again.

Another useful feature is Info-Select's ability to "Grab" (i.e., Copy) your screen and save it in a window or "Put" (i.e., Paste) data from a window straight into your application. You could save repetitive typing by pasting addresses straight from your address stack into your letters on your word processor or do the same with a collection of template paragraphs. Info-Select makes them easy to find and quick to insert.

Use Structured Forms Too

If you want to set up template forms which prompt you to fill in the blanks, you can easily do this, too. Use the program for jotting down ideas, making "to do" lists, and creating reference material of any kind. Whenever you want to track down some info, type "G" and any word(s) you think are contained in that same window. Any windows in the original stack or a selected pile can be summarized, joined together, exported to another application, or printed.

Your RAM will limit the number of windows you can keep in one stack. The smaller the windows, the more you can have. You can quickly flip to another stack and can have as many stacks as you like but each stack acts like a separate database and only one can be stored in RAM at a time.

Other Features

Info-Select also has 5 ways to see overviews, hypertext (make your own info base), line drawing, date tickler, and phone dialer. It is efficient on portables and allows file locking and sharing on LAN's. These and more features can be accessed from pull-down menus.

This program is unique, easy to learn and doesn't cost much. But I use it because I can track all kinds of information without wasting time thinking about it. Don't you hate to waste time thinking?

Robert Tarrant is principal of Office Evolution (767-6206)

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PROGRAMMING

TEGL Windows Toolkit

by Stephen Smith

Product: TEGL Windows Toolkit
Publisher: TEGL Systems Corporation
Suite 780, 789 West Pender Street,
Vancouver, B.C., Canada, V6C 1H2
Phone: (604) 669-2577 Fax: (604) 668-9530
System Requirements: IBM PC compatible with VGA or EGA color graphics. The current version requires that you program in Borland's Turbo C or Turbo Pascal. A new release, that should be ready by the time you read this, will also support Hercules and CGA graphics and allow you to program in Microsoft's Quick C or Quick Pascal
Price: $99.00

Large companies like Lotus or Microsoft can spend tens of millions of dollars hiring dozens of programmers to add support for different graphics displays, different keyboards, different mice, different processors and different printers. But what's a small single programmer going to do, often programming at night while keeping a day job? Or what about someone who just wants to play with some simple graphics, without having to read and understand three 500-page manuals? The programmer needs to concentrate on just programming his idea; that is all he has the resources for. So how does he compete with the big guys?

A Higher Level

The answer is to use a higher level than straight C under DOS. Microsoft offers a solution with Windows and Presentation Manager; however, these can cost $1000 to set up to program in, and the programming is extremely complex. TEGL offers a low cost solution to the problem of graphics and input (through mouse and keyboard). In fact, I found TEGL to be as simple as many text-based menuing and windowing packages.

The TEGL Windows Toolkit is a subroutine library and a number of utilities that allow a programmer to easily write graphically based programs that use both the keyboard and mouse. TEGL offers a set of five games as shareware that are all written using the toolkit. These games give a good indication of the capabilities of the toolkit (the games are Monopoly, Klondike Solitaire, Big 2, Mahjong, Solitaire and Mille Bornes). TEGL also offers a game toolkit for writing card games.

Programming using the TEGL toolkit is relatively easy. The toolkit includes routines for displaying menus, drawing windows, inputting from the mouse and keyboard, drawing icons, handling events, drawing text (in several fonts), performing animation and performing a set of special effects. Also provided in the toolkit is an icon editor for drawing bitmapped icons. The next release of the toolkit promises to add dialog boxes as well.

The documentation is excellent. The package comes with a 200-page manual on disk which documents all the subroutines and explains the overall programming methodology. The toolkit also comes with complete source code for the entire TEGL toolkit. This is ideal for programmers interested in knowing how a modern windowing system is written. Also, if TEGL was to disappear, the programmer could fix any bugs that were later discovered or could add new features as needed, and hence would not be left out on a limb.

Event Driven

Generally, as in many windowing packages, you write your code in an event-driven manner. In this case, instead of polling the mouse and keyboard for input and then figuring out what to do based on the keystroke, mouse button state, and mouse cursor position, you set up event handlers, so that when certain events occur certain routines in your program get called.

For instance, if the left mouse button is clicked over a specific icon, then a routine in your program is called to perform the action. This could be something like clicking the "save" button in the file menu, causing the routine in your program to save the current user's work to be called. Working with this sort of methodology makes the programming of highly interactive applications much easier, as they become more simply structured, and thus more maintainable.

No Run-Time Royalties

TEGL produces a stand-alone program that requires no special environment. This means you do not have to distribute any sort of run-time environment, nor pay any additional royalties when you sell your program. For games programmers this is a must, since they cannot rely on home users having packages such as Microsoft Windows, or even having computers powerful enough to run Windows.

Nothing's Perfect

On the down side, TEGL offers no printer support (however, other packages are available for printer support only), you have to use one of the supported languages, and the end user must have a supported display driver (when Hercules is supported, this should not be a problem).

With the introduction of Microsoft Windows 3.0, which includes very high quality graphics, printer support, multitasking, advanced virtual memory management and a very large user base, much of the graphics market is going to go to Windows 3.0, but, hopefully, there is still a niche for simpler, less-expensive packages such as TEGL Windows Toolkit.

Stephen Smith is a computer programmer in Vancouver. 224-5242

AMIGA AND ATARI

All the latest do-dads

by Graeme Bennett

Amiga

24-bit Color for Amiga

The biggest news I heard rumble through the Amigoid community this month is an amazing new graphics enhancement known as HAM-E from a company called Black Belt. Basically a video card that plugs into the RGB output of any (yes!) Amiga, the HAM-E device can generate up to 16.8 million colors, while maintaining full compatibility with Amiga genlocks and other video output options. Priced at a remarkable US $300 and already attracting support from most key Amiga graphic software developers, HAM-E looks like a sure winner.

Amax II

Also newsworthy is an ad placed in the latest *AmigaWorld* magazine by Canadian company ReadySoft promoting Amax II/Plus, an upgrade to their previously so-so Mac emulator And what an upgrade it is! With an Amiga 2000 or greater, you can now read/write Mac disks on Amiga drives, print direct to LaserWriters over AppleTalk, connect Mac SCSI devices such as scanners, hard drives, etc. Amax II/Plus also supports Mac MIDI, Mac digitized sound and the ability to use partitions on most existing AmigaDOS hard drives. Not bad for a machine that also has an IBM-AT compatibility option.

Also kicking around is a patch that allows owners of earlier Amigas to use the new WorkBench 2.0 that is shipping at this time only with the new Amiga 3000 The only catch is, Amiga owners with only 512K of "chip RAM" will find that the new Workbench and O/S patch leave them with a marginal amount of usable RAM, at best.

Touch Up

Now shipping is the much-delayed Amiga version of the MiGraph hand scanner, with version 1.0 of its Touch Up software The MiGraph scanner with Touch Up has for some time been the premiere scanner package for the Atari ST market. Touch Up is also available for IBM compatibles. With the ability to load and save popular IBM and Mac graphic formats such as TIFF, MacPaint and PCX, Touch Up is a useful tool for desktop publishers.

When I first got the scanner a few months ago, it seems that MiGraph management said "Ship it anyway," because the Amiga version's box said "Beta Software 0 9 — Free upgrade to 1.0 when it's ready." What this means is that, if you purchased one of these "beta releases," instead of several of the operations described in the manual, a dialog box popped up saying "Still Under Construction." Luckily, all the scanning functions worked fine, with up to 400 DPI resolution. After sending in the registration card, the final release arrived recently, with all of the program's advanced image manipulation functions active, and an extra surprise!

The Amiga 1 0 version of Touch Up features a "true gray scale mode" unavailable in the Touch Up beta or the Atari version. With this new mode, the scanner can digitize pictures in 16 true gray scales, or 31 apparent gray scales, as well as the dithered patterns available in the beta release

The advantage of true gray scales becomes apparent when you resize an image. If the different gray shades were saved as fixed patterns of dots, these dots will "clump together" when the image is shrunk. However, with gray scales, the gray areas are saved as actual "colors" of gray Hence, when the picture is resized, the grays stay gray. The actual dots are rendered by the output device, in this case the Amiga printer driver Indeed, Touch Up 1 0 was well worth the wait!

Atari

Removable Storage for ST

For the last few months, I have had the pleasure of working with Atari's new Megafile 44, a SyQuest-based 44 megabyte removable hard disk for their ST series of computers. This quiet unit has performed flawlessly, and is quite speedy, too, with an approximate access time of 25 ms.

The supplied software allows formatting, bad-sector mapping (mine had none), partitioning, autobooting and parking of the hard drive. Better still was the news that inside the Megafile 44's attractive case is all the circuitry, connectors and power necessary to connect a second hard drive. Even the mounting brackets and power light are right there, ready for a standard PC-type SCSI drive and cable to be dropped in!

Reportedly, the next version of Spectre GCR, the popular Macintosh emulator for the Atari, will be able to read and write SyQuest platters formatted on Mac drives, much as the Spectre-equipped Atari transparently handles Mac floppy disks. At the moment, the Megafile 44 works fine with the Spectre, using the Spectre's proprietary disk format.

Prints Charming

"New to North America" is a pair of programs that have been popular in Germany for about two years. Created by Application Systems/Heidelberg, the German titles *STad* and *Signum Write* have reached our shores as *Sketch* and *Script*. Marketed here by MegaMax/ASD, each non-copy-protected, monochrome-only program features a pleasantly low price of around a hundred bucks, a completely rewritten manual and includes printer drivers for 9-, 24-pin, inkjet and laser printers. Happily, the print quality is nothing short of spectacular!

The only bug I could find was in Sketch, where a special function key command allows you to load super-high resolution Signum or Script fonts. Although the regular graphic and text-on-graphics functions of Sketch work properly, the high-res text feature exposes the program's German origin. When you type the letter Y, you get a Z character, because of Germany's QWERTZ keyboard layout. Of course, the work around is simple Just type Z instead of Y and "Jed's a millionaire."

Sketch includes a bevy of features that will delight hackers, like the ability to load in several contiguous screens to make a super-large scrolling background, output graphics as source code, even send graphics out the serial port! You can customize printer drivers (if you dare), and Sketch includes direct support for scanners, with customizable "dither matrixes." There's even a 3D object editor and animator

Oh, yeah, you can sketch with it, too. Sketch comes with a giant multi-screen "life-size" demonstration picture of a, er, buxom young lady in fairly revealing garb that's a big hit with the guys at the software stores, at least.

When I first installed Script, I had the strangest sensation of Deja vu. *Where* had I seen this before? Sure, it was based on the original (German) Signum Write, which in turn was derived from the powerful (and pricy) Signum technical document processor, but more than anything else, Script bears an uncanny resemblance to MacWrite From the rulers to the menus, this program is clearly an Atari clone of MacWrite 5 0 (or possibly WriteNow 2.0)

So, did it survive the translation? Happily, yes! The North American version does not suffer from the QWERTY anomaly noted in Sketch, nor does it lack the features of its mid-range Macintosh counterparts. multiple fonts, graphics, footers, headers, spelling checker and multiple document windows

Script, like Sketch, requires an Atari ST, STE or Mega computer with monochrome monitor and a minimum of one megabyte of RAM Both programs have also been tested successfully on Atari's new TT 030 computer The manual warns that ST users with 1 meg may want to skip the spelling checker if they want to use several fonts. Sketch comes with one high-quality family of fonts, and (you guessed it), an order form for lots more.

If you're an Atari ST user with monochrome monitor, at least one meg of RAM (preferably more to take advantage of all features) and want easy-to-use programs with unbeatable print quality, Sketch and Script are well worth a look.

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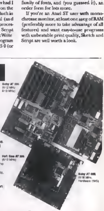

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COMPUTER
ANIMATION

by Larry DeFehr

The Illusion of Movement

Animation is the illusion of movement created by presenting a sequence of slightly different static images to our eyes. Traditionally, this progression of images was painted on transparent cells and recorded on film for subsequent projection As computers garnered power in the mid '70's, this effect was also simulated on computer screens. But, because of the tremendous amount of memory required, animation was relegated to the domain of mainframe computers.

By the late 1970's Apple II, Commodore Pet, and Radio Shack owners were animating images by writing routines in Basic Even though the pixel chunks were big, they moved across the screen, but it would be a number of years before microcomputers would be able to compete with the big league.

To be of much use for television, images must be in color, of a reasonable resolution and compatible with the NTSC output standard Those requirements don't come cheap. A typical broadcast quality video animation workstation in the early 80's commanded a price tag well into the 6 or 7 figure bracket—a top-of-the-line video post production suite can still cost that much today The focus of this article will be on solutions for IBM-PC and compatibles, Macintosh, Atari and Amiga computers.

RenderMan

RenderMan is a procedure, or more correctly, a set of software algorithms for assigning color textures, volume shading, depth of field, motion blur, and environment data to objects in a 3D scene The technique used by RenderMan is more efficient and precise than other methods of assigning attributes to 3D objects and has been accepted as an industry standard Developed by Pixar of California, RenderMan describes how light sources emit light, how surfaces reflect and transmit light, and how the atmosphere affects the scene even when lights, cameras and objects change position The program assigns the attributes without increasing the size of the file in which the original 3D objects were created. The RenderMan algorithms are called "shaders" and can even be used to produce special environmental effects such as rain, snow and wind. Pixar's animated short "Knick-knack" and the seawater creature in the movie "The Abyss" are good examples of what RenderMan can do.

We can expect to see a growing number of 3D modelling and CAD programs which will be supporting the RenderMan method of generating photorealistic scenes. RenderMan toolkit packages are available for under $1000 but, check for compatibility with your existing rendering software before you rush out to get it. Your 3D modelling program must be able to save files in a RIB (RenderMan Interface Bytestream) format in order to be compatible. (See "The RenderMan Companion—A Programmers Guide to RenderMan", Addison Wesley for more information.)

Graphics Boards for the Mac

High-resolution graphics boards from third-party suppliers have been slow in coming, due in part to Apple's lengthy delay in defining the criteria for their color "QuickDraw" screen writing descriptions. Broadcast quality output has therefore only recently been possible with the Mac.

Truevision's 32-bit "NuVista+" graphic boards which include a 32-bit processor, 1, 2 or 4 MB of video memory, 4 channels of digital-to-analog conversion and genlock, are now available for the Mac. They can capture real-time video and include the capabilities of Truevision's previously optional VidI/O box in order to convert video signals. The NuVista+ boards list for between $4,000-$9,000 depending on which model you choose.

The ColorCapture graphics board from Data Translation has 16-bit color (32,768 colors), which is about the effective limit of television video. Unfortunately, it is not adjustable to adequately handle programs which only have 8-bit color. It sells for around $4,500.

RasterOps, from Santa Clara, California, produces a series of high-quality 8- to 32-bit boards starting at under $1,000. Their 364 board combines 24-bit video output with real-time video capture on

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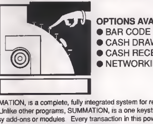

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one board. As a result, you can have full-motion video in a window on your Mac screen while you work! (RasterOps is also well known for their monitors and accelerators.)

ColorSpace IIi 3 is a 24-bit color board from Mass Microsystems. The board can be set to display Mac graphics only, video only, and adjustable levels of Mac graphics and video. It can't capture video in real time like the NuVista board does, but Mass MicroSystems offers a companion board, the ColorSpace FX priced at $4,000, which will allow flicker-free full-motion video. The ColorSpace IIi 3 board sells for about $2,700.

There are now dozens of graphics boards to choose from for the Mac, including a couple of new 8- to 24-bit cards from Apple. A buyer should carefully examine the operational capabilities of a board to be certain it will be compatible with the software they've chosen.

Not Quite Prime Time...

If you plan on using your animation for in-house, educational or home videos, you probably don't need professional quality output. With the correct NTSC signals out of your computer, you can send your animations directly to a video recorder, in real time, without having the expense of costly controllers and VTR's capable of single frame recording. By not mixing computer animation together with live video images, you also won't need frame grabbers or some of the other costly graphic boards necessary for high quality output.

Interestingly, the standard Mac II video card can be programmed to output a not-quite-broadcast-quality RS-170A composite video signal using a little-known utility from Apple called "Video Card Utility." This free program includes simple instructions for building the necessary cable for connecting a VCR or composite monitor. Though officially unsupported by Apple, this utility may be found on many Mac BBS's.

Mac 3D Modelling

A variety of powerful 3D modelling programs are available for the Macintosh, including the SoftVisions' RIO & TOPAS programs mentioned earlier.

Swivel 3D from Paracomp in San Francisco is a medium priced 3D rendering package that has texture mapping and anti-aliasing. It was initially developed for simulating objects as a CyberSpace environment.

(CyberSpace is a 3D computer generated environment where the user interacts with objects in the simulated environment through sensors that are worn on the body or hands such as a DataGlove.)

Swivel 3D allows users to define complex camera paths by tweening between multiple keyframes. The rendered frames can be saved in a number of file formats or saved in a Scrapbook for subsequent import into an animation program. It has shadow casting, texture mapping, anti-aliasing, a variety of rendering and shading styles and has a hierarchical linking option. It retails for about $450.

The next upgrade to Swivel 3D, Swivel 3D Professional, is scheduled to ship by the time you read this. The Professional version promises to be 24-bit compatible, support RenderMan and AutoCAD DXF (Data Exchange Format) files in addition to having a number of new features.

Another popular 3D program for the Mac is StrataVision 3D ($650), which was used to create the cover of the July issue of *The Computer Paper*. StrataVision features complex ray-tracing, reflection, texture mapping and smooth photo-realistic rendering, including the export of AutoCAD DXF and RenderMan RIB files.

MacroMind Three-D, soon to be released, is made up of a set of three modules. 3DWorks, RenderWorks, and ImageWorks.

3DWorks accepts files from 3D modeling packages such as Swivel 3D and other CAD programs and then allows the wireframe objects or camera to be moved in three-dimensional space and be recorded as keyframes. RenderWorks adds 32-bit color, shading and texture and allows scenes to be exported in RenderMan formats. ImageWorks provides anti-aliasing and saves the individual frames in a PICS file format. Single frame videotape controllers which handle the memory intensive 32-bit images are available from Diaquest, Lyon Lamb, and Videomedia. MacroMind Three-D will list for about $2250.

Sculpt 3D, from the Byte by Byte Corporation in Austin, Texas, offers a powerful photorealistic 3D modeling program for the Mac. In addition to the standard wireframe, hidden line removal, anti-aliasing features offered by other 3D programs, Sculpt 3D also has full-image ray-tracing and a number of color and light sources. It retails for around $1800.

Dimensions, from Visual Information Inc. in California, has a set of 3D design modules that can read and write files to a number of CAD formats and produce high resolution animation for film or video output. It will support up to 32 bits of color (16.8 million colors) and has an optional Ray Tracing module with built-in marble, wood, metal and other common textures. The Dimensions Presenter, Ray Trace, Design, and Interpreter module prices range from around $500 to $2000.

2D Animation

VideoWorks I, from MacroMind, was one of the first popular animation programs for the Mac. Clips created with this program have appeared on network television but, due to the jaggy black and white nature of the output, only as part of program content.

MacroMind Director is an upgrade from the earlier version VideoWorks II which is rumored to end publication. Director is a powerful 8-bit color animation program which supports MIDI sound, imports MacPaint, PICT, and PICT2 files, and contains a nice paint program. However, like its predecessor, it requires 5 MB of RAM to run large files properly. Version 2.0, due to be released soon, will support 32-bits of color and have drivers to control audio and video disk players, and videotape recorders. List price is $800. (*Another interesting rumour that we heard near press time, was that MacroMind was releasing a program that would allow animations developed on a Mac in Director, to be played on IBM-PCs*)

MotionWorks in Vancouver, is just about to release AddMotion, their 2D animation program which is designed to work together with Apple's new ver sion 2.0 of HyperCard. When an animation is created with AddMotion it is simply saved as a stack. A player XCMD for viewing the animation is also saved in the stack together with automatically generated command scripts and buttons. AddMotion extends HyperCard's graphic manipulation capabilities with many features such as scaling, transition effects, auto-transform, multiple path animation, four voice sound, and the option of 24-bit color. The program will retail for around $290.

A fully loaded Macintosh FX with a Motorola 68030 CPU running at 40 MHz with co-processors, a RAM cache card, accelerators, virtual memory, and a 80 MB hard drive together with a high resolution 19" color monitor, rivals the capabilities of workstations costing many times more than the $20,000 you will pay for the Macintosh system. (A basic color Macintosh starts at around $6000, and less powerful Macintoshes can be purchased for much less.)

The Amiga

When Commodore released this Motorola 68000-based computer in 1985, it was the first microcomputer that included the necessary built-in video circuitry, to produce reasonable quality, NTSC-compatible video graphics. This, coupled with the capacity to eliminate (overscan) the borders around the active screen area makes the Amiga particularly appropriate for titling and other output to video.

The Amiga series of computers have acquired, since their introduction, a disproportionately large base of artistically-inclined users. The Amiga pioneers came because of the machine's (then spectacular, now unremarkable) hardware capabilities, the others came for the graphics software that has grown steadily in quantity and quality. Today's Amiga artists are blessed with a seemingly endless supply of 3D editors, video titling, paint and animation programs.

Amiga Evolution

Amiga graphics programs have evolved from the first-generation programs like Deluxe Paint, Aegis Animator and Deluxe Video (each with a maximum of 32 colors) through the second-generation hold-and-modify "HAM" programs (DigiView, DigiPaint, Deluxe PhotoLab).

With a maximum of 4096 colors at 320*400 resolution (or slightly higher with overscan), HAM is a big improvement over the Amiga's 32 color "low res," but still fares poorly when compared with IBM or Macintosh 24-bit color options (themselves, third-generation graphic technologies).

3-D Software For Amiga

The third generation of Amiga graphics are almost, but not quite here. A smattering of Amiga programs such as Turbo Silver (3D rendering) now support 24-bit color, or resolution-independent output to film recorders and other ultra-high-quality output devices, but there are few higher-resolution output options other than those that plug into the IBM-compatible slots found in the Amiga 2000 and above. These slots can be used with an IBM emulator called the BridgeCard, which enables the use of most PC software and hardware add-ons. (An AT-compatible version is also available, although cynics point out that you can buy a *real* AT for the cost of the AT BridgeCard.)

Nonetheless, according to the Amiga's product manager Jeff Evans, Amiga has already captured over 60% of the low-end video graphics market.

Growing Pains

The Amiga wasn't without its growing pains. The genlock cards (controller hardware which synchronize incoming video signals with computer graphics) were a long time in coming and developers were slow to produce enhanced graphics boards for the platform.

Today there are a number of broadcast-quality genlock systems to choose from, the most popular of which is the SuperGen from Digital Creations—it retails for $1,400.

A company called NewTek is due to release "Video Toaster"—a 24-bit, frame grabber, still-store, character generator, video switcher, digital effects board which has four built-in processors. The video graphics board will be bundled with 3D and paint programs and will sell for around $2,000.

Software for the Amiga

As any computer widow can tell you, the cost of the hardware is by no means the major portion of your long-term computer investment. Software usually represents the lion's share of the money spent. Luckily, the Amiga fares quite well here. Because it is perceived as a budget machine, software prices tend to be low, compared to IBM or Macintosh.

There is a good selection of software for the Amiga to choose from today. Sculpt-Animate 4D from Byte to Byte (the same people that make Sculpt 3D for the Mac), make a nice 3D modelling and animation package. It has features like: metal, glass and mirror textures, selectable phong shading, anti-aliasing, ray tracing, unlimited number of lights, key frame animation, motion blur and support for single frame tape control-

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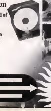

lers. It hits at $600

TurboSilver, another 3D graphics and animation program from Impulse, is prefered by some for its ease of use. It retails for $250.

The Director, from The Right Answers Group, is a display and animation language for the Amiga. This program allows the user to choreograph animated 3D scenes with 2D scenes, add text, sounds, and video for a variety of presentation styles—it retails for $115.

Speedy Animations

Partly due to the Amiga's specialized graphics co-processors, notably its Blitter (Block Transfer) chip, and partly due to its relatively low resolution and number of colors, animations are speedy, even on a low-end 7.16 MHz Amiga. As Macintosh owners who upgrade to graphic boards with millions of colors will tell you, many colors and higher res make for slower graphics performance.

The Amiga is well-equipped to act as a presentation vehicle for animated graphics and soundtracks.

The new AmigaVision authoring software currently bundled with higher-end Amigas is a good step in bringing "multimedia to the masses." AmigaVision makes it relatively easy for a non-artist to create sophisticated visual effects, presentation graphics and animations. The package will also be available separately to current Amiga owners and is expected to sell for under $200.

Roll 'em!

With an Amiga, video camera, genlock and a VCR, virtually anyone can afford to produce their own video extravaganza.

The Amiga is a cost effective solution for desktop video and, like the Macintosh, provides current users with an affordable upgrade path from their older machines.

The Atari ST and STE

Decidedly more popular in Europe than North America, the Atari STE shares much in common with the Amiga. With its animation-enhancing Blitter chip, stereo sound, a maximum of 4096 colors and built-in composite video and genlock compatibility, Atari has clearly designed the STE as a competitor to the Amiga. An STE with color monitor sells for around $1400.

A few add-on graphic boards for the ST computers exist, notably a unit from Parsec that supports 16.8 million colors. Image Systems has a high-res (1024x768) card with 4096 colors and another company called JRI sells a low-cost (under $100) board that increases the 512-color palette of older ST's to the STE standard of 4096 colors. JRI also produces a genlock for the ST for around $800.

Several companies also supply real-time video digitizers for the ST. The best digitizer/software combo for the ST appears to be Color ComputerEyes and Trio Engineering's DigiSpec software. With this combo, any ST can digitize full-color, 512-color pictures from a composite video source.

Software for the ST

A group of graphics programs called the Cyber series are currently the best such applications available for the ST series computers. CAD 3D, Cyber Studio and Cyber Sculpt are 3D graphics editors, Cyber Texture is a texture mapping utility for CAD 3D/Cyber Studio, Cyber Control is a procedural language to assist in the creation of complex 3D Cyber Studio animations.

Cyber Paint is a 2D/3D animation and paint program virtually identical in commands and functions to Autodesk Animator for the IBM (not surprisingly, both were written by Jim Kent, who also wrote Aegis Animator and Zoetrope for the Amiga.)

Spectrum 512 and UniSpec are second-generation 512 color paint programs much like the Amiga's DigiPaint.

Cyber VCR allows an Atari ST to remotely control certain DIN plug-equipped Sony VCRs, allowing the seamless splicing together of complex animations from the above-mentioned products.

A handful of other Cyber utilities round out this well-integrated and extremely inexpensive library of graphics and animation utilities. (As an example, Cyber Paint sells for less than $100, compared to AutoDesk Animator's price of nearly $400.)

New Phase

Interestingly, several of the programmers that originally worked on the Cyber series of programs for Antic Software have left that company to form a new venture called Lexicor Software Inc. They are, by the time you read this, slated to release a series of "next-generation" imaging and animation products.

Called "Phase-4," the series consists of four modules: ROSETTA 3D Object viewer, CHRONOS Keyframe Animation Studio, PRISM Rendering Package and KENITC Player Package. Phase-4 features math coprocessor support and resolutions up to 1024x768 in 4096 colors, using the above-mentioned color board from Image Systems.

The Phase-4 programs also support an application data exchange protocol that provides output of RenderMan-compatible RIB files and six other formats. This allows Atari artists to use their equipment as off-line workstations and then have the images transmitted to higher-performance machines for final photo-real rendering.

Lexicor is reported to be initially marketing the Phase-4 software bundled with Image Systems' above-mentioned hi-res color board.

The Mac Option

Another option for ST owners is a $700 cartridge called Spectre GCR that enables the Atari to run most monochrome Macintosh programs including animation software such as Super 3D, VideoWorks II, Macromind Director, Studio/1, HyperCard, SuperCard and others.

IBM and Clones

IBM and clone users have a number of low-priced, mouse-driven animation programs to choose from, the most popular of which are GRASP and Autodesk Animator.

The Professional GRASP animation program from Paul Mace Software in Oregon sports an acceptable on-board paint package. Animated clips can be accessed from within other applications through external commands, however, scripting is required in order to animate images. It sells for about $150.

Autodesk Animator from AutoCAD is probably the best of the low-cost animation programs for IBM DOS VGA platforms. It is compatible with AutoShade and AutoCAD file formats and it will support Amiga, Atari, RenderMan, Targa and PCX image files. It sells for approximately $400.

Micro Advantages

Some of the advantages of the lower-priced microcomputer systems like the Macintosh, Amiga, Atari or IBM are thet they support the integration of sophisticated MIDI or internal sound playback with the animation, allow for SMPTE time coding, have relatively shallow learning curves and, probably best of all, have a large installed base. This means that the software will be less expensive to purchase and, when you have a problem, there are a lot of people who can help you.

Higher End

I recently spoke with a local computer animator who had purchased one of the higher-end machines which was running expensive software that had been developed in Europe. He said that he had just spent an hour talking to someone in France in an attempt to solve the problem be was having. If your software/hardware support line isn't in the same time zone, at least it should be on the same continent!

Rendering individual 3D images with assigned texture maps, anti-aliasing, shading, and shadow-casting frames from an animated sequence require a lot of computer processing capability and memory. A single frame of broadcast quality animation can take 15 minutes to process even on a Sun workstation. (That's 75 hours of processing time for 10 seconds of animation). To render a single frame of a complex, ray-traced image on ordinary microcomputers can take hours. Once processed, the frames are stored as 2D images each of which can be up to a few 100K in size, so even a few seconds of high-resolution color animation will require a substantial amount of storage space.

Regardless of which type of rendering and animation system one decides on, it is recommended that you purchase all the necessary components well in advance of the projects they are intended to produce. When dealing with multimedia, a wide variety of problems can arise.

The High End

The leading edge in video and computer technology is at best a tenuous place to be. Some of the largest and best computer-animation houses have had to declare bankruptcy. Is the big league worried about microcomputers creeping into their lair? No, the networks will always be able to afford the best. A Harry Suite with Quantel software can do just about anything you can ever imagine with video. In Vancouver the Harry Suite costs $800 per hour and TV show producers and major corporate TV advertisers won't mind paying for it. It's the manufacturers of mid-range machines, between the dedicated high-end systems and the new breed of micros, that are probably worried.

Which way to go?

If you need to include memory-intensive special effects in your presentations then the higher-end, dedicated animation workstations are probably the best bet because high-quality animation is what they are designed to do best. However, if you want to use the machine for other things like desktop publishing, accounting or word processing, then the lower-priced microcomputers like Macintosh, Amiga, IBM or Atari are the way to go.

Bus Pass

To paraphrase Chipp Walters from Design Edge, "You can either get on the bus, get run over by the bus or, watch the bus go by." The final chapter on computer animation hasn't been written yet, so the best you can do is determine what it is you would like to do with a computer and then find a package that will do it with the dollars you have to spend.

Larry DeFehr is president of ArtBase, a computer graphics, desktop publishing and software development firm. He is also a partner in GraphicText Application Inc., a company that developed ConvertUnits for the Macintosh. He has produced both conventional cell animation as well as animation created on a variety of computers. He is currently the art director for the TV science series, "Breakthrough".

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- DOUGLAS COLL. New West 520-5400.

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JUMP SYSTEMS Suite 460-650 W 41st, Vancouver 263-5867 dBASE III RBase
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dBase III+ Intro $75
LANGLEY COLLEGE, 530-6411
Database *20 hrs $300
LANGLEY CONT ED 533-4227
dBase III+ $85
MICROAGE 3601 W 16th Ave 222 1818
dBase III IV $175
PBSC TRAIN 1330-1140 W Pender 689-7772
dBase III+ L1 2-3 $175
PCTI 520-6873 dBase IV $100
PITMAN 1490 W Broadway 738-7848
dBase III+ dBase IV $180/$120
PROF TRAIN 502 1185 W Georgia 681-5803
dBase IV L. $350, dBase II to IV $175
STM SYSTEMS CORP 984-7721
dBase III & Introduction $175
UBC CONTINUING ED UBC Microcomputer Lab 222 5251
dBase IV Intro (4 Wed) Sept. 19 Oct. 1&,$180
VANCOUVER SCHOOL BD., 736-7241
dBASE III + Level 1 & 2
dBase IV Level 1 & 2 $85
VAN COMM COLL. 250 W Pender St. Van. 682-5844 (call for dates)
Intro to dBase III Plus Sept. 7,16,29 $160
Intermed dBase III Plus Sept. 28 $180
Intro to dBase IV Sept. 8 $160
Intermed dBase IV $150
Update to dBase IV for dBase III Users $75
Programming in dBase Sept. 11 $180
VCC CONT ED Certificate Prog 324-5322
dBase III+ Clipper Applns Dev $185-190

DESKTOP PUBLISHING

ADVANTAGE COMPUTERS LTD 148-4004 Lougheed Hwy Burnaby 299-3861
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FileMaker Level II Sept. &
BURNABY COLL 4900 KINGSWAY 437-5711
Graphic Design DTP (IBM & Mac)
BURNABY SCH BD 299-4361
Word Perfect 5 & Level 1 Sept. 25,27 $80
BUSINESS COMPUTER CENTRE Prince George 561-0278
Xerox/Ventura Publisher (custom training)
CADENCE 300-1661 Chestnut, Van., 738-7636
PageMaker Ventura
CAPILANO COLL. N Van 984-4901
Desktop Publisher $70
CIRRUS ENTERPRISES Victoria, 388-8844
PageMaker Ventura
COASTWAY 206-2581 Spruce St. 738-8030
PageMaker Ventura, CorelDraw
COMPUTERLAND 640-8806
DOS & Mac PageMaker Harvard Graphics
COMPUTER EMPIRE 876-4162.
Ventura $145
CORP PUBLISHING LTD., 1500 701 W Georgia St. 687 1140.
Corp Desktop Publishing Sept. 24 $2,800
COQUITLAM CONT ED 936-4261
Ventura or PageMaker $85

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DOUGLAS COLL. Mac West 529-5400.
PageMaker Ventura, hands-on intros $95
GUILDFORD CONT ED Centre 14577 106A Ave., Surrey 581 2221
Mac PageMaker $85
JUMP SYSTEMS Suite 460-650 W 41st, Vancouver 263-5867
PageMaker Ventura
KWANTLEN COLL Surrey 588-4411
Desktop Publ. Ventura DTP Intro
LANGLEY CONT ED 533-4227
DTP IBM Intro 4 sess 3 hrs. $105
Mon Thurs. 7 p.m Dec. 18
Rodney Cookcroft Baytree Cntr., #204-20621 Logan Ave
DTP With PageMaker $70 Mac Intro $85
DTP with PageMaker $72
Tues 7 p.m Sept. 25
McKAY 2151 Burrard 736-7221
Desktop Publ Graphic Arts 12 wks
MICROAGE 3601 W 16th 222-1818
Aldus PageMaker Pt 1 2 $175
NAVIGATOR TRAINING 879-5427
PageMaker Freehand Xpress, Illustrator
NORTHWEST DATA 985-5409
PBSC 330- 140 W Pender 689-7772
PageMaker Call for info $450
PCTI 520-6873 PageMaker $160
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Electronic Publishing Graphic Design
SIMON FRASER Downtown 687-4255
Intro to Ventura Publisher $160
STM SYSTEMS CORP 984-7721
PageMaker $320
STRACHAN COMPUTERS LTD #202-1760 Marine Drive West Van 926-8424
PC PageMaker CorelDRAW
Intro Adv Private/group lessons
TLD COMPUTERS #150-5851 No 3 Rd, Richmond
Pagemaker Basic $250 Advanced $300
UBC CONTINUING ED UBC Microcomputer Lab 222 5251
Desktop Publ Design & Illustr Using the Letraset Electronic Studio Line
(2 Sat.) Nov 3 & 17 8 am noon and (3 Tues) Nov 6-20 7 10 pm $365
VAN DTP CTR 1150 Homer 681-9161
Ventura, Pagemaker
VAN SCHOOL BD 736-7241
Mac-PageMaker $80
Ventura Level 1 & 2 $120
IBM PageMaker 3.0 Level 1 & 2 $120
VCC 250 W Pender St., Van 682-5844
IBM/IBM Compatible
Graphic Design for DTP Sept. 15 $75
Intermed Design for DTP $75
PageMaker (Intro Interm), Sept. 23 $160
DTP Workshop (PageMaker) $375
Intro to Ventura, Sept. 15 $160
Adv WordPerfect DTP Sept. 15,23 $160
VCC CONT ED. Cert. Prog. 324-5322
PC PageMaker $190

EVENTS

LAN MANAGEMENT FOR SYSTEM ADMINISTRATORS Vancouver Sept 18-19 Pacific Palisades Hotel 1277 Robson St. 688-0461

TROUBLESHOOTING UPGRADING INSTALLING AND SUPPORTING YOUR NETWARE LAN Vancouver Sept. 20-21 Pacific Palisades Hotel, 1277 Robson St., 688-0461

COMDEX/Europe at SICOB, Oct 4-8 Paris

COMDEX/Fall '90 Nov 12-16, Las Vegas

COMPUTERFEST '90 Oct. 12,13,14 Toronto

COMPUTER SWAP MEET Sat. McPherson Ctr 7325 McPherson Ave., Burnaby For info call 531 0629.

CORP PUBLISHING GROUP LTD., 1500 701 W Georgia St. 687 1140 Introduction To The World of Desktop Publishing Sept. 13 Oct. 4., $150 Typography for DTP Sept. 14 $150

DATA TECH INSTITUTE, c/o Conference Call, Inc. 1138 Sherman Dr Ottawa, Ont. K2C 2M4 A Two-Day Seminar Troubleshooting & Maintaining the IBM PC XT AT PS/2. Vancouver B.C Sep 4-5.

DATA TECH INSTITUTE Setting Up & Managing A Computer Help Desk. Vancouver Sept. 6-7

FUNDAMENTALS OF FINANCE & ACCOUNTING FOR NON-FINANCIAL EXECUTIVES. Vancouver Sept. 17 18 Canadian Management Centre 150 University Ave Suite 300 Toronto Ont. M5J 1V5

HOME BASED BUSINESS SEMINARS by H.A (Buzz) Bezanson HOME MADE MONEY (How To Successfully Start a Home Based Business) North Vancouver 986-8888 Carson Graham Sr Secondary Sept. 29 9 a.m -4 p.m DOLLARS IN YOUR MAILBOX (Mail order/direct mail) Nanaimo 753-3245 Malaspina College Sept. 15 9 a.m -4 p.m. Vancouver 736-7241 John Oliver Sr Secondary Sept. 18-18 7 10 p.m North Vancouver 986-8888 Carson Graham Sr Secondary Sept. 26-27 7 10 p.m HOW TO EARN MONEY WITH YOUR HOME COMPUTER. Richmond 273-5461 Kwantlen College Sept. 22 & 24 9 a.m -4 p.m Vancouver 736-7241 Point Grey Sr Secondary Sept. 17 & 24 7 10 p.m

HOW TO WRITE DESIGN & EDIT NEWSLETTERS. A one-day seminar Vancouver Sept. 11 1990. Business & Professional Research Institute 813-910 Mainland Street, Vancouver V6B 1A9

INTERN'L TELEMARKETING CONSULTANTS LTD., Suite 4000 900 W 6th Ave. Vancouver 734-8888 SELLING ON THE TELEPHONE — An Introduction To Taking That First Step Sept. 20 9-12:30 p.m 4000-900 W 6th Avenue Vancouver, B.C

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- Panasonic 1180 Printer w/cable $249 00
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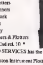

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FAX 224-8496

LEARNING TREE INTL PROJECT MANAGEMENT Skills for Success Vancouver, B.C. October 15-19. Contact Susan Lankford (613) 748-7741.

MacWORLD EXPOSITION/CANADA Oct 23-25 1990 Toronto Ont. Hundreds of exhibitors from Canada, US and overseas are expected to attend and demonstrate the latest innovations and technologies available. Also world-renowned experts will be participating in a 3-day Mac conference

NORTHEAST COMPUTER SHOW Oct 25-27 Boston

PACIFIC COAST COMPUTER FAIR & SWAP MEET Oct. 20 McPherson Centre 879-9871

PUBLIC LEGAL EDUCATION SOCIETY Free class on computers and the law for sellers, buyers and users 438-4041

UBC CONTINUING ED. UBC Microcomputer Lab 222-5251 Review Course for ICCP Certification (10 Wed) Sept. 5 Nov 7 7 9 pm; Sat. Sept. 29 9 am 1 pm $265

UNIX SOLUTIONS Oct 3-5, Anaheim CA.

WRITING AND DESIGNING Successful Promotional Materials A One-Day Seminar Vancouver Sept. 28 Centre for Continuing Education, York University 1315 Finch Ave W., Suite 500, North York, Ont. M3J 2G6.

INTEGRATED SOFTWARE

CIRRUS ENTERPRISES Victoria, 386-8844
Framework II Intro Advanced
DOUGLAS COLLEGE New West.
Getting to Know Your Computer, $118
Computer Use for Disabled $48
SuperCalc4 Intro June 23 $108
DRAKE #601 889 West Pender 689-8789
Smart, Symphony
GUILDFORD CONT EDUC., 14577 108A Ave., Surrey B.C., 589-2221
MS-Works $85
STM SYSTEMS CORP 684-7721
Symphony $280
SURREY (Newton Cont. Ed.) 594-2000
Microsoft Works
TLD COMPUTERS #150-5851 No 3 Rd.
Microsoft Works $200
UBC Cont. Ed. UBC Microcomputer Lab, 222-5251
MS-Works: Intro Sept. 15 & 22 9 am 4 pm $198
VAN SCHOOL BOARD 736-7241
Framework III MS Works Lev 1 & 2,
Symphony Lev 1 & 2 $99
VAN. COMM COLL., 250 W Pender, Van 682-5844
Intro to Microcomputers, Sept. 10 $168
Intro to Excel, Sept. 12,13 $168
Intro to MS-WORKS 2.0, Sept. 12,22 $180

LOCAL AREA NETWORKS

BCIT 3700 Willingdon, Burnaby 434-1610
COMP 286 Novell Netware 286 $158
CADENCE 3rd Floor 1881 Chestnut, Van 733-7838
Accredited 3Com Netware Administration Courses
CENTRE FOR ADVANCED PROFESSIONAL ED (808)345-0240
Troubleshooting LANS
CIRRUS ENTERPRISES Victoria, 386-8844
Intro to Local Area Networks
COMPUTER EMPIRE 879-4182
Networking Sys. Instl. $245
COMPUTERLAND 648-6090 Novell
Novell System Manager (3 days)
DRAKE #601 889 West Pender 689-8789
Netware System Manager for Novell
JUMP SYSTEMS Suite 450-650 W 41st, Vancouver 263-5887
3Com Netware Admin., Novell Netware
NETWORK SPECIALISTS Inc. 3228 Beta Ave. Burnaby 294-5855 or 1-800-663-1514.
Various network and Novell courses
MICROADE 3601 W 16th Ave 222-1010.
Novell Syst. Mgr $895
SOFTRAK SYSTEMS 1661 W 8th 736-3741
Novell Call for info
TLD COMPUTERS #150-5851 No 3 Rd.
Novell Sys Man $260
UBC CONTINUING EDUC., 222-5251
Local Area Networks, Nov 10, 10 am - 1 pm $85
Novell Administrator's Workshop, (5 Thur)
Nov 1-29 7 9:30 pm $295
VCC CONT ED Certificate Prog. 324-5322
LAN Network Management (1) $190

MACINTOSH

ADVANTAGE 536 Howe St. 685-6227
Intro to Mac PageMaker, Works, Word, Excel Hypercard, MacDraw II, FileMaker, FoxBase+, Aldus Persuasion, Wingz
Macintosh Level I Sept. 10
Macintosh Level II, Sept. 10
Macintosh Level I & II Sept. 17
Macintosh Level I & II, Sept. 24
Macintosh Level III Sept. 25
BCIT 3700 Willingdon Burnaby 434-1610
COMP 190 Meet the Mac, 12 wks $200
BURNABY SCHOOL BOARD
Intro to Macintosh Sept. 26 $35
Bedford Acct. on Macintosh $80
BYTE COMPUTERS 2151 Burrard St.,
Intro Macintosh $85, MS Works $140
MicroSoft EXCEL $85, Bedford $180
Word $85, PageMaker $140
CAPILANO COLL. N. Van 984-4901
Basics of Micro-Computers $165
COMPUTERLAND 640-1906
Mac Literacy, Excel Worksheet, Database & Graphics Microsoft Word WordPerfect, Quark Express, Adobe Illustrator
DRAKE #601 889 West Pender 689-8789
Word Intro Excel Intro
FOLKSTONE DESIGN 686-4502
MicroSoft Word PageMaker Excel
GUILDFORD CONT ED Surrey 586-2221
Intro to Mac. Sept. 26 $80
LANGLEY CONT ED #88, 533-4227
Macintosh Intro $65
Tues 7 p.m. Sept. 18
Macintosh Painting & Drawing $68
Wed 7 p.m. Sept. 19
Microsoft Works/Macintosh $68
Tues., 7 p.m. Sept. 18
MACSUPPORT 681-9067
On-site instruction consultation development. Mac intro Word, Excel, Works, MacDraw, SuperPaint, PageMaker HyperCard, FileMaker Foxbase 4th Dimension.
NAVIGATOR TRAINING 879-5427
Word Version 4.0 Excel 2.2, WordPerfect
SFU DOWNTOWN 291-5100
Intro. to PageMaker $175
SURREY (Newton Cont. Ed.) 594-2000
Intro to Mac $65
UBC CONTINUING. ED., UBC Microcomputer Lab 222-5251
Getting started with your Mac Sept. 22 & 29, $145
VAN SCHOOL BD 736-7241
Mac Intro PageMaker Excel Word MS-Works Bedford WordPerfect, SuperPaint $80

MUSIC/MIDI

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MIDI Music Tech, 8 wks $150
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Performer MIDI seq. C-Lab Notator $38
E-MU Proteus Voice Creation $38
Yamaha SY77 Digital Workstation $38
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PROGRAMMING & DEVELOPMENT

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Computers in business various programming languages Call for information
BURNABY SCHOOL BD. 299-4361
BASIC I $48
BASIC II $65
CARIBOO COLL., Kamloops, 828-1916
Intro Micros $105
CIRRUS ENTERPRISES Victoria, 386-8844
Course Devel. services Intro to SAS
CORP PUBLISHING LTD., 1500-701 W Georgia St., 687 1140
Advanced Newsletter Prod., Sept. 24-27 $695
LANGLEY CONT ED #88, 533-4227
How to Get Started with Your Computer Training Free
Wed 7 p.m., Sept. 5, Langley Sec. Cafeteria
Managing Your Hard Disk $35
Thurs 5:45 p.m., Sept. 20
Earn Money with Your Computer $30
Section I Tues., 7 p.m., Oct. 23
Section II, Tues. 7 p.m., Dec. 4
LEARNING TREE INT. 1-800-267 1664 Wendy Lalande.
Project Management, Halifax N.S. July 24-27
UBC CONTINUING ED 222-5251
Programming in C An Intro Sept. 26-Oct. 25, $165
Acquiring Keyboard Skills & Computer Confidence A Lab Tutorial $50
Sept. 13 7-10 p.m.
Learning About Microcomputers. A Lab Workshop 2 Sat. Sept. 15 & 22 $165
Learning About Microcomputers Using MS-Works 2 Sats Sept. 15 & 22 $165
Getting Started with Your Macintosh: An Intro 2 Sats Sept. 22 & 29 $145
VAN SCHOOL BOARD 736-7241
Assembler C Intro BASIC
Turbo Pascal (1&2) $65
VAN. COMM COLL., 250 W Pender St., Van, 682-5844 (call for dates)
"BASIC" Language Level 1 Sept. 15 $160
"C" Language Programming, Sept. 15$160
Lotus Macro Programming Sept. 20 $150
VCC CONT ED Certificate Prog. 324-5322
Programming Intro $190

SPREADSHEETS

ACCSYS Suite 200, 535 Thurlow St. 685-5342
Lotus $150
BCIT F/T 432-8419, P/T 434-1610
BCIT 3700 Willingdon Burnaby 434-1610
Framework II Lotus 1-2-3
Comp 115 SPREADSHEET CONCEPTS $70
Comp 185 LOTUS 1-2-3 - Level 1 $190

BURNABY COLLEGE 437-5711 Lotus
BURNABY SCHOOL BD 299-4301
Lotus 1-2-3, Sept. 25 26 $88
BUSINESS COMPUTER CENTRE
Prince George 561-0278
Lotus 1-2-3, Jun 13-14 $239
CADENCE 3rd Floor 1401 Chestnut, Van 733-7636
Accredited Excel Courses
CARIBOO COLL. Kamloops 828-1919
Spreadsheets $156
CIRRUS ENTERPRISES Victoria, 386-6844
Lotus 1-2-3 Intro, Intermediate
Lotus 1-2-3 Macros, QuattroPro Intro
Excel Intro, Excel Fast Track
COASTWAY 2501 Spruce Van 736-5039
VP Planner Plus 12 hrs, Lotus 1-2-3 12 hrs
COMPUCOLLEGE Van 682-6800 Bby 435-2424 Rich 273-0373 Micro Business Appl
COMPUTER EMPIRE 875-4162.
Lotus 1-2-3 (call for dates) $145
COMPUTER STN 2130 Burrard 732-8621
Lotus 1-2-3 Intro, Interm, Adv $186
COMPUTERLAND 640-6900
Excel Excel Database & Graphics
Excel Macros, Lotus 1-2-3, Lotus Database & Graphics, Lotus Macro Programming
COQUITLAM. CONT. ED 936-4261
Lotus 1-2-3 Lev I & II $80
DOUGLAS COLL. New West. 520-5400
Lotus 1-2-3 Man. Data & Macros $109

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Symphony, Smart, Lotus
IPC SYSTEMS, 220 W 7th 873-5595
Lotus 1-2-3 Series Call for dates $186
JUMP SYSTEMS Suite 450-550 W 41st, Vancouver 263-5867
Lotus 1-2-3, Excel
LANGLEY COLLEGE, Langley 530-8411
Spreadsheets 186 hrs $300
LANGLEY CONT. ED. 533-4227
Lotus 1-2-3 $86
Section I, Tues., 5.45 p.m. Sept. 18
Section II, Wed., 8 p.m., Sept. 19
Section III, Tues. 5:45 p.m., Oct. 16
Section IV Weekend, Sat., 9:30 a.m., Oct. 13 & 20
LOTUS 1-2-3 LEVEL II, Wed., 8 p.m. Nov. 7 Brookswood Sec. Rm. 104 $86
MICROAGE 3801 W 16th 222-1616.
Lotus 1-2-3 Pt. 1 $175
PBSC 1350-1140 W. Pender 688-7272
Lotus 1-2-3, Excel $175
PCTI 520-6873 Lotus 1-2-3 $106
PITMAN 1490 W Broadway 738-7068
Lotus 1 2-3 day/eves $180/186
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Electronic Spreadsheets $145
PROF. TRAIN. 1185 W Georgia 681-5906.
Lotus 1 2-3 $175 Excel Basics $350
SOUTH GRANVILLE 1652 W 7th 732-8860
Call for dates Lotus 1 2-3 2 wks $325
STM SYSTEMS CORP 684-7721
Lotus 1 2-3 Intro $175
STRACHAN COMPUTERS LTD. #202-1760 Marine Drive, West Van 926-6424
Lotus 1-2-3 & VP Planner, Intro, Adv., private group lessons
SURREY (Newton Cont. Ed.) 594-2000
Lotus 1 2-3 $86
TLD COMPUTERS #150-5061 No. 3 Rd.
Excel $200 Lotus 1 2-3 $200
UBC CONTINUING ED., UBC Microcomputer Lab 222-5261
Lotus 1 2-3: Learning to Use the Spreadsheet Tool (4 Tues) Sept. 18 - Oct. 9, 7 - 10 pm $195
VANCOUVER SCHOOL BD., 736-7241
Lotus 1 2-3, VP Planner
MS Excel, SuperCalc 5 $80
VAN. COMM. COLL. 250 W Pender 682-5844
Intro to Lotus 1-2-3, Sept. 8 13 15,22,26 $186
Intermed. Lotus 1-2-3 Sept. 13,29 $186
Adv Lotus Macro Prog. Sept. 26 $186
Acct. with Lotus 1-2-3 $186
Intro to MS Works 2. $186
Using Lotus 1 2-3 $106
VCC CONT. ED. Certificate Prog. 324-5322
Lotus 1-2-3 $190

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PBSC 1350-1140 W Pender 688-7272
Crosstalk $175
CAI LTD., 661-0196
Intro to Voice Mail & Messaging Private or Group Sessions, $106
CANADIAN MIND PROD 684-0529 Ready Green
UBC CONTINUING EDUC 222 5251
Concepts In Data Comm., Nov 3, 8 am - 1 pm $75
Info Resources Online: Connecting to the Man Electronic Databases (4 Tues), 7 - 9 pm, Robson Square Media Centre $186

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ACCSYS Suite 203 535 Thurlow 685-5342
DOS $150
BCIT Full Time 432-8419, Part Time 434-1610
Understanding MS DOS
BCIT, 3700 Willingdon, Burnaby 434-1610
Computing for the Timid $70
Understanding PC/MS-DOS $136
BURNABY SCHOOL BD. 299-4301
MS DOS/IBM Intro., Sept. 24,25,26,27,29 $90
Understanding MS DOS Sept. 2 $85
BUSINESS COMPUTER, Prince George 561-0278
MS-DOS $186
CADENCE COMPUTER DESIGN
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Intro to MS-DOS OS/2
CAPILANO COLL. N. Van 984-4901
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CARIBOO COLL. Kamloops 828-1919.
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Intro to MS-DOS, $186
COMPUTER TRAINING CENTRE, 103-20052 56th Ave Langley 534-5777
INTRO TO MS-DOS $80
CORP. PUBLISHING LTD., 1500 - 701 W Georgia St., 687 1140
Intro to DOS Sept. 11, 16, 26 $106
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DOS Intro Advanced
FRASER VALLEY COLL. Abbotsford 853-7441
Intro to IBM PC & MS DOS
GUILDFORD CONT. ED Centre, 14677 - 100A Ave., Surrey 589-2221
Computers Made Easy Sept. 26 $70
IBM PC Level 1 (Intro) Sept. 24-27 $88
IBM PC Level 2 (MS-DOS) Sept. 25 $88
Understanding MS-DOS $88
JUMP SYSTEMS Suite 450-550 W 41st, Vancouver 263-5867
Computer Systems and DOS,
Computer Systems and OS/2
KWANTLEN COLL. Surrey 588-4411
Managing Your Hard Disk $79
LANGLEY COLLEGE Langley 530-8411 Automated office training for the disabled, visually or hearing impaired, physically disabled. Call for info, fees and dates
LANGLEY CONT. ED 533-4227
Intro to IBM-PC, 8 sess. 2 hours $86
Section I, Mon. 5 45 p.m. Sept. 17
Brookswood Sec. Rm 104
Section II Mon. 8 p.m., Sept. 17,
Brookswood Sec. Rm 104
Section III Tues., 8 p.m. Sept. 18,
Baytree Centre #204-20621 Logan Ave
Section IV Wed., 5.45 p.m., Sept. 19
Brookswood Sec. Rm 104
Section V Thurs., 8 p.m. Sept. 20,
Brookswood Sec. Rm 104
Section VI Tues., 5:45 p.m., Oct. 30,
Baytree Centre #204-20621 Logan Ave
Section VII Tues. 8 p.m. Oct. 30
Brookswood Sec. Rm 104
Section VIII, Wed. 5:45 p.m. Nov 7

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Courses: Mondays and Wednesdays, 18:00-21:00
17 Sept 8 Oct 15 Oct 5 Nov 12 Nov 3 Dec
Course duration: 21 hours *Course capacity:* 12 students
Course fee: $95 *Prerequisite:* None
This course is directed at the seagoing engineer or mariner with IBM or no microcomputer knowledge. The student will be introduced to the IBM PC environment including elementary DOS (disk operating system) structure and commands. The course will cover an introduction to an integrated software package which will include wordprocessing, spreadsheets, graphics, and database applications.

CME02 INTRODUCTION TO PC BASED COMPUTER AIDED DRAFTING
Courses: Tuesdays and Thursdays 18:00 - 21:00
18 Sept 4 Oct 8 Oct 25 Oct
Course duration: 18 hours *Course capacity:* 8 students
Course fee: $200 (includes CADKEY 2 software)
Prerequisite: CME01 or elementary DOS knowledge.
The student will understand and utilize the basic concepts of microcomputer aided CAD. The software used will be Cadkey 3.5. The student will learn the practical tools required to set up a computerized drawing environment and create simple drawings. Hands on structured laboratory time is emphasized.

CME03 COMPUTER AIDED DRAFTING LEVEL 1
Courses: Tuesdays and Thursdays 18:00 - 21:00
30 Oct 11 Dec
Course duration: 30 hours *Course capacity:* 8 students
Course fee: $275
(CADKEY 2 software can be purchased for $70)
Prerequisites: 1. CME01 or elementary knowledge of DOS preferred 2. Completion of CME02 or working knowledge of PC based CAD system.
The course will focus on the creation and plotting of 2-dimensional drawings such as diagrams, diesel and scale drawings, each hands on Lab will offer a choice of exercises that will cover a range of disciplines. The software used will be Cadkey 3.5

CME04 PC BASED DATA RETRIEVAL TECHNIQUES
Courses offered to groups and individuals on request.
Course duration: 30 hours
Course capacity: 8 students
Course fee: $195
Prerequisites: Course CME01 or equivalent
This course will expose the student to the installation of additional hardware into an IBM compatible computer making the machine capable of logging data and controlling the functions of equipment in the engine room. The course will concentrate on the connection and calibration of hardware, and the setting up of a software drawings to acquire the data. As part of the course students will download cylinder pressure readings from an instrumented diesel engine and carry out analysis and data reduction techniques to evaluate engine performance. The student should have elementary DOS knowledge or have completed the introductory computer course CME01 offered at PMTI. Although the course is aimed at marine engineers, it is open to non marine related personnel. The software used will be Labtech Notebook, Control and DADisp.

CME05 PC BASED PROCESS CONTROL TECHNIQUES
Courses offered to groups and individuals on request.
Course duration: 30 hours *Course capacity:* 8 students
Course fee: $195 *Course Prerequisites:* Course CME04
Building on methods established in CME04 the course will concentrate on process control techniques using the same software. The student will use the microcomputer to control hydraulic and pneumatic valve operation, control stepper motors and utilize a PC as a monitoring and control device for a diesel engine.

TO REGISTER CALL: 985-0622

Brookswood Sec. Rm 104
Section IX Thurs., 5:45 p.m., Nov
Brookswood Sec., Rm 104
Intro to the IBM-PC Saturday 6 hours $80
Saturday 9 a.m. Oct. 13 Langley Sec., Rm. 204
Understanding MS-DOS $80
Choosing a PC 1 sess. 3 hrs $25
Wed., 7 p.m. Oct. 24 Langley Sec., Rm. 222
PC TROUBLESHOOTING $80
Wed 7 p.m. Sept. 19
Understanding MS-DOS $80
Section I, Thurs., 5:45 p.m., Sept. 20
Section II Thurs., 8 p.m. Nov 1
MICROAGE 3809 W 10th 222-1010
Intro to PCs/DOS, $175
NORTH SHORE CONT. ED. 986-8888
PBSC 1350-1140 W Pender 688-7272
Intro to PC DOS 1 & 2 Adv $175
PCTI 520-6873
Intro to DOS $100
PITMAN 1490 W. Broadway 738-7848
Using MS/DOS days/eves $180/110
PRECEPT 735 Clark Dr 255-3198
Intro to IBM $125 Power of MS-DOS $125
PROF. TRAIN. 502 1185 W Georgia, 981-5803.
Intro to DOS $175, Windows $175
SOUTH GRANVILLE 1652 W 7th 732-8850
DOS 1 Call for dates $190
STM SYSTEMS CORP. 688-7721
Intro to Computers $140 DOS Intro $175
STRACHAN COMPUTERS LTD. #202 1760 Marine Drive, West Vancouver, B.C. 926-6424
DOS, Intro mixer, Windows
SURREY (Newton Cont. Ed.) 596-2000
Intro to IBM $80
Intro MS-DOS $85
TLD COMPUTERS Richmond 273-4700
PC Basics $190
TRITECH COMPUTERS Delta 597-4777
MS-DOS 18 hrs. $99
UBC CONTINUING ED. UBC Microcomputer Lab, 222-5251
Keybd. Skills & Comp Conf. Sept. 13 $80
Learning Microcomputers Sept. 15 & 22. $199
MS-DOS Intro Sept. 29 9 am noon $80
VAN. SCHOOL BOARD 736-7241
IBM PC Intro, Cantonese Intro, Managing Your Hard Disk
Understanding MS-DOS $89
VAN. COMM. COLL., 250 W Pender St., 682-5844
Intro to DOS Sept. 4,8,15 18,30 $190
MS/PC-DOS, Intro., Interm $150
Intro to PC & DOS $190
VCC CONT. ED. Certificate Prog 324-5322
PC & DOS Intro, various dates $190
DOS Op. Sys & hard disk man. $190

WORD PROCESSING

ADVANTAGE COMPUTERS LTD., 535 Howe St., 685-6227
MS-Word Level I, Sept. 11
MS-Excel Level I Sept. 11
Microsoft Word Level II, Sept. 12
Microsoft Word, Level III, Sept. 13
Microsoft Excel Level II Sept. 14
Aldus PageMaker, Level I Sept. 18
Adobe Illustrator Level I, Sept. 19
Aldus Freehand, Level I Sept. 20
MacDraw Level I, Sept. 21
MS-Word Level I Sept. 25
ACCSYS Suite 208, 535 Thurlow 685-5342
WordPerfect $150
BCIT 3700 Willingdon, Burnaby, 434-1610
Word processing $70
Microsoft Word $181
WordPerfect $200
BCIT Burnaby 434-1610.
Microsoft Word
BURNABY SCHOOL BD. 299-4381
Word Processing 1 Sept. 27 $67
Word Processing 2, Sept. 28 $87
Word Processing 1 Sept. 25,26, Oct. 20 $65
BUSINESS COMPUTER CENTRE, Prince George 961-8278
WordPerfect Intro $239
WordPerfect Adv $129
CADENCE COMPUTER, Vancouver 733-7638
Accredited Microsoft Word for Windows Courses
CAPILANO COLL. N. Van 986-1911
MS-Word L. I $140
CARIBOO COLL. Kamloops 828-1010
WordPerfect 5.0 Graphics $50
Word Proc. $160
CIRRUS ENTERPRISES, Victoria, 388-8844
DisplayWrite 4 Intro DisplayWrite 4 Adv
Microsoft Word Intro Microsoft Word Adv.
WordPerfect 5.0 Intro/Adv/Fast Track
COASTWAY 2501 Spruce St. Van 736-5038
WordPerfect 12 hrs, Microsoft Word 12 hrs
Advanced WordPerfect & Word, 6 hrs
COMPUTER EMPIRE 879-4198
Word Perfect, WordStar $149
Chinese WP $185
COMPUTE@ STN 2130 Burrard 732-8821
WordPerfect, Word Venture, $190
COMPUTERLAND 640-6500
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Word Perfect 5.0 Lev. I, II, III
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Word Perfect 5.0, Level I Sept. 6,8,19 $195
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Adv WordPerfect 5.0 $118
Adv WordPerfect 5.0 $109
Microsoft Word 5.0 Intro $135
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DisplayWrite 4 Word Multimate Advantage, WordPerfect 4.2/5.0/5.1 Legal Smart Word Proc.
FRASER VAL. COLL. Abbotsford B.C 853-7441
Intro. WordPerfect
GUILDFORD CONT. ED., Surrey 588-2221
WordPerfect 5.0 Level 1 Sept. 25 $80
JUMP SYSTEMS Suite 450-650 W 41st, Vancouver 263-5887 WordPerfect 5.0 and 5.1 Microsoft Word 5
KWANTLEN COLL. Surrey 588-4411
WordPerfect 5.0 Intro Lev. II, $80
LANGLEY COLLEGE Langley 530-8411
Word Proc. Automated Office 120 hrs $380
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Upgrading to WordPerfect 5 $40
Microsoft Word 5.0 Sat. & Sun., 9:30 a.m. $198 Nov 17 & 18
WORD PERFECT $80
Section I Mon., 5:45 p.m., Sept. 17
Section II Mon., 8 p.m. Sept. 17
Section III Wed., 5:45 p.m., Sept. 19
Section IV Wed., 5:45 p.m., Nov 7
Section V Thurs., 5:45 p.m. Nov 1
Section VI Thurs., 8 p.m. Nov 1
WORD PERFECT LEVEL II $89
Section I Wed., 8 p.m., Sept. 19
Section II Mon. 5:45 p.m. Oct. 29
WORD PERFECT Weekend Fast Track $105
Section I Sat.&Sun., 9:30 a.m. Sept. 22&23
Section II, Sat.&Sun., 9:30 a.m. Nov 3&4
WORD PERFECT Business Applications $85
Mon., 8 p.m. Oct. 29
WORD PERFECT, DTP $80
Wed 8 p.m. Nov 7
WORD PERFECT for Legal Secretary $105
Sat. & Sun. 9:30 a.m. Oct. 27 & 28
MICROAGE 3809 W 10th 222-1010
WordPerfect Lev 1, 2; Word V 4.5, $175
NORTH SHORE CONT. ED. 986-8888
PBSC 1350-1140 W. Pender 688-7272
DisplayWrite Word WordPerfect $175
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WordPerfect, Microsoft Word $208
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MS-Word 5 Intro. (4 Tues) Sept. 18 - Oct. 9, 7 9:30 pm $185
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USERS GROUPS & ASSOCIATIONS

Amiga User Group (PaNorAmA) BCIT Rm 129-1A General Meets 2nd Wed 7:30 Programmers 4th Wed 7:30 Bill Wagstaff 597 1748
Apple/ABCCS Meetings location Burnaby Lake Clubhouse, Burnaby Sports Centre Sprott St. & Sperling Ave
Apples B.C. Computer Society Computer User Group for all Apple users, call 275-4863 information line for membership info Kiyo Masuda 437-9935
Architect User Group (Macintosh) Call Glen Schiller or Kal Gill Byte Computers 736-2181
Astute—Atari ST 1st Tues., 7:30 Hastings Comm. Ctr Dennis 420-8710
ATARI USERS! Vanatari P.O Box 3614 Main Post Office Van. B.C V6B 3Y6 Bill Sutherland 665-1450 Don Hatch 433-8055 Meets 2nd Wed., 7:30 Hastings Comm. Ctr. 3096 E Hastings
Beaver Valley Commodore Club 1st Tues., Montrose School Library Call John Vink 367-6426
B.C. Regional Users Group Society of Hewlett-Packard Users Call Terry 420-1277
B.C. Unix Users Group meets 4 times a year George Pajari 925-2555, 2545 Queens Ave West Van V7V 2Y9. Dinner meeting 736-8384
Chilliwack Commodore Computer Club (C.C.C.C.) 978 Supporting Commodore Amiga, P.O Box 413, Sardis B.C V2R 1A7
Computer Aided Ministry Society of Canada (Christian Computer Users Group) meets at Pacific Academy 516 Brookmere Coquitlam (near Lougheed Mall) 2nd Thur. 7:30 pm.
Data Processing Management Association (DPMA) Dinner meetings 4th Tues. Stanley Pk Pavilion Call Frances Dickson 660-3800 to register or Gail Nichols 660-9533 for info
Greater Victoria Personal Computer Users Assoc. PO Box 5309 Station B Victoria V8R 6S4 General meeting last Wed. Also special interest group meetings 604-382-3854.
Independent Computer Consultants Association Ste 400 1190 Melville St. Van. B.C. 660-2747
Kaypro User Group/Vancouver Portable Computer Club 3rd Mon. at Kwantlen College Richmond (DOS & CP/M) 271 1516
Macintosh Owners ABCCS contact person: John Miller 433-1795.
MacWest Computer Society 2 monthly meetings for members plus PD copy session General Meetings 2nd Wed 7:30 pm
MacWest Intro User Meeting 3rd Wed., 8 pm Guildford Pub Lib., Surrey PD Copy sessions & meeting Bob Scales, 464-3945 Rail Drommer 941-3789
Microbig-128 SWL Users Group c/o Robert Andersen 1055 Moosejaw St. Penticton B.C
Mission Computer Users Group last Tues., 7 pm 33346 Second Ave. Mission Robin L. McCormack 826-9500 John Gale or Cindy MacGregor 826-3800
Maple Ridge Computer User Group 2nd Tues of every month M.R. Sr. Secondary 7:30 J. Brohman 463-5818
NEC APC Users Group Lee 980-5825
NewViews User Group 322-6198 POCO 1870 Laurier Hyde Creek Centre
Pacific Information Exchange P.O Box 67356 Station O Vancouver V5W 3T1
Port Coq. Computer Club—Commodore, Amiga & IBM 1st & 3rd Tues 7:30 Rm. 104 George Pearkes Jr Sec. School 1380 Laurier Ave Port Coquitlam Mike Evans 942-4286
Smart User Group Brian Wiebe 588-6665
Society for Technical Communication Call 669-2855 for info
Software B.C #400 1190 Melville St., Van., B.C 684-7432
3VUG 3COM Van Users Group re-formed meets Fri 3 pm at Cadence Computer 1861 Chestnut Van. Contact Sylvia Taylor 733-7638 or Dan Schiller 683-2118
T.I 99/4A Computer B.C. User Users Group Every Thurs 7 10 pm. Cameron Rec Ctr Bby Ron 522-2598 1st Thurs Tutorials 2nd Thurs General 3rd Thurs Tutorials 4th Thurs Copying Prog.
TRACE (Richmond Atari Club) Thompson Comm Ctre 272 5780 1st & 3rd Mon 7 30-9:30
Vancouver Autocad Users Society BCIT Bldg. 3A Room 110 1st Wed. of the month, 7:30 pm. Contact Dave Trews, 530-6426 for info

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Vancouver Color Computer Club 3rd Tuesday Discovery Park 3700 Gilmore Way Burnaby Contacts: Jordan Dehvilin 420-6061 Steven La Faver 467-0823.
Vancouver dBase Users Group 2nd Wed 7 pm. 800-1190 Hornby St. Van 684-9311
Vancouver Electronic Publ. Assoc. 252 E. Woodstock Ave., Van V5W 1N1 (mail) For info call Katrina Dennis 321-5559 September Meeting Mon. Sept. 10 6 p.m. Tillicum room B.C Club 2nd Floor 750 Pacific Blvd. South, Plaza of Nations. Running a Small Business, GST Phone 733-9080 leave message
Vancouver Netware Users Group Les Leblanc 275-8884 Meets 1st Mon
Vancouver Perfect Computer Club (VPCC), AMO 17 Jay Siegel 4251 Lancelot Dr. Richmond B.C V7C 4S4 604-271-1616
Vancouver PC Users Group, Science World auditorium 6:30 pm 2nd Thurs $25/yr 734-0060
Van. Sinclair Users Group Timex-Sinclair 2nd Fri Killarney Comm. Ctr. Gerd Breunung 931-5509
Vanatari, Box 3614 Main Post Office Van., BC V6B 3Y6. Judy Harcus 875-1841 Don Hatch 433-8055, 2nd Wed. Hastings Comm. Ctr., 3096 E. Hastings
VersaCAD User Group 2nd Tues Call CADD Solutions Inc., 681-4866 for info.
Wang System Users 736-8841 ext 227 J.-P Deiran.
West Coast Computer Society Hastings Comm. Ctr., 1st Wed 7:30 Visitors welcome Terry 942-5105.
CAN'T FIND IT HERE? For information on courses and programs throughout BC and elsewhere (both online and off) contact Discovery Training Network 300—475 West Georgia St., Vancouver V6B 4M9 604/660-2303, or 1-800/663-1383 (toll-free in BC) or plug into their database

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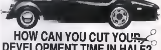
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Late Breaking Stories

Apple/Microsoft Case: Poor Contract Heart of Problem

SAN FRANCISCO CALIFORNIA, AUG 24 (NB) — Federal Judge Vaughn Walker says a poorly written contract between Microsoft and Apple Computer is the stumbling block in front of settlement of a two-year-old "look and feel" lawsuit.

Apple's suit, filed in 1988 charges that Microsoft and HP, with its "NewWave" program, violated Apple's copyright and the terms of an agreement between Microsoft and Apple which licensed Microsoft to use certain elements of the Macintosh visual display. However, the judge has questioned the basis of the suit — the contract — saying that this entire matter is "a problem with contract drafting."

Walker has been asked to settle the dispute without a jury trial. He is expected to take several weeks to make his decision.

Interface Operates WordPerfect

MEMPHIS TENNESSEE, AUG 23 (NB) — GR Technology (Memphis, Tenn.) has announced Perfectly Simple, a memory-resident utility designed to allow new or infrequent users of WordPerfect to access WordPerfect's capabilities without learning the program's command structure. The program is designed to reduce the learning curve of new personnel. The software retails for $129.95 and is available directly from the company. Call 901/366-1202.

New Unix for 386 Being Developed

SANTA CRUZ, CALIFORNIA, AUG 22 (NB) — Santa Cruz Operation (SCO) has announced an agreement with American Telephone and Telegraph Co. (AT&T) and Intel Corp. under which the three firms will work together to develop a new version of the Unix operating system for computers based on Intel's line of microprocessors.

Canada Remote Subscribers Buy-out Falls Through

TORONTO, ONT D, CANADA, 1990 AUG 24 (NB) — A group of subscribers to Canada Remote Systems, the bulletin system that suspended operations at the beginning of the month, has dropped plans to buy the boar

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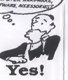
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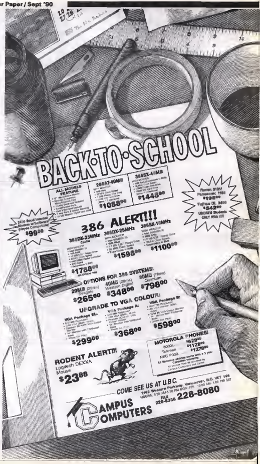

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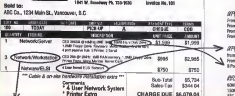

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QUANTITY	ITEM NO	DESCRIPTION	UNIT PRICE	AMOUNT
1	Network/Server	CEX 386SX @16MHz 2MB RAM 85MB Hard Disk Drive, 1.2MB Floppy Drive Keyboard Mono Monitor Arcnet card 4 port passive hub 2 Printer 2 Serial	$1,999	$1,999
3	Network/Workstation	CEX 286 @12MHz 1MB RAM memory 1.2MB Floppy Drive Printer Ports Mono Monitor Arcnet Card	$995	$2,985
1	Netware/ELSI	4 User Novell ELSI Software	$750	$750

*** Cable & on-site hardware installation extra ***

Comments
- 4 User Network System
- Printer Extra

Sub-Total	$5,734
Sales-Tax	$344 04
CHARGE DUE	$6,078.04

ADD MORE WORKSTATIONS AND PORTS FOR MORE USERS

NOVELL ACCPAC PLUS
AUTHORIZED DEALER

UPGRADE HARD DISK STORAGE

From 65MB to 100MB	$375 00
From 65MB to 200MB	$989 00
From 65MB to 320MB	$1,578 00
From 65MB to 620MB	$3,700 00

UPGRADE NOVELL SOFTWARE

from 4 User to 8 Users (Max)	$720 00
From 4 users to 100 Users (Max)	$1855 00
8 Ports active HUB units (each 8 users)	$399 00

RECOMMENDED OPTION FOR NETWORK

60MB Tape Backup Units	$550 00
150MB Tape Backup Units	$1,495 00
APC Uninterruptable Power Supply 520ES with monitor card	$760 00

VANCOUVER'S DISCOUNT SUPER STORE

DOPPLER'S Computer Buyer

Discount Product Listing

AB.2 Vol.1 SEPTEMBER 90

OPEN EVERY DAY

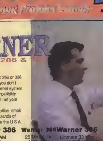
Inside

INSIDE TURN TO PAGE:

Recycled Ribbons
Service Upgrades
Computer Training
Student Discounts 2
Doppler BBS 2
Laptops 2
Education Sale 24
Discount Hardware 25

WARNER

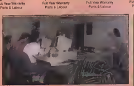
SYSTEMS 286 &



Why settle for less? When you can buy a brand-name Warner 286 or 386 system from Doppler Computer Centre. Unlike some systems, you don't have to worry about compatibility or warranty service. Every Warner system comes with a full one year parts and labour warranty, plus a compatibility guarantee that will pay you $500 if your Warner system does not run your compatible software.

Before you make a decision to buy any other system for your office, small business or home, remember you'll save hundreds or even thousands of dollars on a brand-name Warner System 286 or 386, designed in the U.S.A.

Warner 286	Warner 286	Warner 386	Warner 386	Warner 386
1MB RAM	1MB RAM	1MB RAM	25 MHz	Ultimate 33 MHz
40Mb w/ Cache	40Mb w/ Cache	40Mb w/ Cache	1MB RAM	1MB RAM
STUDENT PRICE	*Much more*	Business SX	40Mb w/ Cache	40Mb w/ Cache
$1249	**$1475**	**$1798**	**$2298**	**$3198**
Full Year Warranty Parts & Labour	Full Year Warranty Parts & Labour	Full Year Warranty Parts & Labour	Full Year Warranty Parts & Labour	Full Year Warranty Parts & Labour



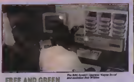
BACK TO SCHOOL

It's a fact that most computer users use only a small fraction of the potential power of their software. The key to unlocking your employee's productivity is computer education. A small investment in proper training now can pay big dividends later.

Doppler's Computer Education Centre can give you the necessary training to dramatically increase your productivity and efficiency.

Doppler offers full-day courses in all the major software programs, including basic DOS, Word Processing, Desktop Publishing, Accounting, Spreadsheets and more.

Our one-thousand square foot air-conditioned classroom is fully equipped with 286 computers, one for each student, and is open five days a week.. continued page 20



The BBS System Operator Wayne Duval and assistant Bob Wilkins

FREE AND GREEN

Did you know that the Doppler BBS is one of the largest, free dial-in computer systems in the country? We now handle over 15,000 calls per month.

Our 33 MHz 386 Warner computer runs sixteen modems at various speeds and has over 800 megabytes of free information and services available to any computer user with a modem.

continued page 22

DISCOUNT HARDWARE

Check out Doppler Computer Centre's full range of quality products at savings of up to 50% off the list price: systems, boards, video cards, RAM chips, scanners, and much more.

continued page 26

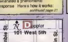
COMPUTER CORNER

The fallout continues from the Computer Corner's untimely demise. Doppler is doing all it can to help former Computer Corner customers. So far we've managed to have fifteen systems repaired under warranty with no cost for parts to customers. Call us if you need help.

STUDENT DISCOUNTS

It didn't take long for the word to get out. Our special student discounts on Warner Computer systems and Toshiba laptops generated a phenomenal response. Here's how it works:

continued page 21



The POWER LIST

Discount Software

[illegible]

POWER SPECIALS

Windows 3.0	98
PC Tools 6.0	99
All Games 15% OFF	
HP IIP Laser	1389
Wordperfect 5.1	289
256K DRAM Chip	5
1Mb DRAM Chip	15
1Mb 286 Board	399
Raven 9101	239

Discount Hardware

Partial list of Hardware on page 25, call or visit for more complete listing. Corporate purchase orders accepted.

Huge inventory selection

...many instore specials

CALL US ANY DAY

875-0261
Sales & Service

727-3414
From Victoria

1-800-661-2805
Anywhere in B.C.

101 West 5th at Manitoba St., Vancouver

SEPTEMBER 1990

ANOVATION

A Monthly Newsletter From ANO Automation (Vancouver) Ltd.

AUTOMATING THE GST

When the proposed Goods and Services Tax passes Senate and then the first and second readings in the House of Commons, Canadian business will venture into a time of confusion and uncertainty.

Although being well informed is one part of the solution, it is important that the information coincides with a strategy for implementation Whether you're a professional, a farmer, importer/exporter, sell commercial or residential real estate, or simply manage a small retail store, the changes will be paramount.

In a move to aid business in this transitional period, ANOOffice Automation has brought together some heavy weights in the industry, for a one day only look at the tax itself, how it will affect you, and ways to combat it in a computerized environment.

A wealth of information from which to tap will be available. Such respected names as Peat Marwick Thorne, Computer Associates, Canon, AST Research, and Roland DG, will be on hand to tackle your concerns, and present you with some fresh ideas

The seminar, aptly titled "Automating The GST", is broken into a morning and an afternoon session to fit your busy schedule In the morning, Peat Marwick Thorne will discuss migrating your existing system (whether it be by hand or by keystroke) into one which handles the GST, Computer Associates will provide an outline on how the GST can be implemented into ACCPAC (the number one selling modular accounting system in North America), while for first timers, or those looking at adding new computer equipment, ANO Office Automation will be presenting guidelines on selecting the right business system for your needs.

This agenda will be repeated for the afternoon session, except for ANO's discussions, which will focus on networking personal computers. Whether you're requirements be a two station LAN, a full scale multi-station/multi-purpose communications system, or somewhere in between, no stone will be left unturned

Before, during, and after the seminar, you will be able to see some of the most state of the art equipment available on the market today - in-

Canon

COMPUTER® ASSOCIATES
Software superior by design

KPMG Peat Marwick Thorne
Information Systems Group

Roland DIGITAL GROUP

AST RESEARCH INC.

ANO OFFICE AUTOMATION

Cont'd on page 3 . . .

PROFESSIONAL TRAINING

British Columbia Institute of Technology (BCIT)

Now available in ANO Richmond

Date	Course	Course #	Duration	Fee
Sept 10	Exploring DOS	59264	6 wks	$ 241
Sept 12	Word Perfect 5 lev 1	49917	4 wks.	$ 161
Sept 13	Lotus 123 lev 1	50109	4 wks.	$ 161
Sept 11	dBase IV lev 1	50171	4 wks.	$ 161
Sept 10	ACCPAC G/L	59331	4 wks	$ 161
Oct 15	ACCPAC A/R	59345	4 wks.	$ 161

Call BCIT at (604) 434 1610 for more information

ANO Professional Training

Date	Course	Location*	Fee
Sept 15	Intro to DOS	R/K/T	$ 75
Sept 29	Intro to Word Perfect	R/K	$ 75
Oct 13	Intro to DOS	R/K/T	$ 75
Oct 27	Intro. to Word Perfect	R/K	$ 75
Nov 10	Intro to DOS	R/K/T	$ 75
Nov 24	Intro Word Perfect	R/K	$ 75

** R = Richmond • K = Kelowna • T = Toronto*

Call your nearest ANO office for further information

SMALL WONDER

Problem: You would love to have the same quality print on the road as you get at your desk

Solution: *The Canon BJ-10e.*

Problem: You can't afford to buy both a printer for your desk and a printer for your portable computer.

Solution: *The Canon BJ-10e.*

Problem: Most portable printers are okay for rough drafts, but you need something you can make presentations with.

Solution: *The Canon BJ-10e.*

Problem: The portable printers you've looked at require special paper which costs a fortune

Solution: *The Canon BJ-10e.*

This may sound too good to be true, but the Canon BJ-10e Bubble Jet printer is truly a printer made for both the desk and the road. Smaller than the Vancouver White Pages, weighing in at an impressive 4.4 pounds, and combined with the optional battery pack (add another .6 lbs) this little beauty can be brought anywhere you want it to go

Utilizing Canon's incredible Bubble Jet technology, also available on the BJ-130e (a full size wide carriage version), the BJ-10e will make you look good without making a whole lot of noise The 360 by 360 dots per inch output makes text and graphics quality absolutely phenomenal

Another option which makes the BJ-10e excellent as a desktop printer is a multiple page, automatic document feeder. Simply clip it on when you get back to the office and you have a full blown, ready to go, business printing system.

If you think this little puppy will cost you a lot of money, well you're in for another shock - ANO has priced the BJ-10e at only $575 00 Canadian. Plus, you won't be spending another heap load-o-bucks on consumables The 10e uses regular everyday plain paper (letter, legal, A4, or envelopes), acetate paper for overhead presentations, and the dry ink itself costs only pennies per page

Quiet, portable, and inexpensive - the Canon BJ-10e

For further information, or if you would like to arrange for a demonstration, simply call the ANO office nearest you

Calling All Computer Corner Customers

With the recent closure of the Computer Corner chain of stores at the end of June, many of Computer Corner's customers have been without warranty support for their systems. Limited salvation is now available

Due to a recent agreement with some of Computer Corner's former suppliers, ANO Office Automation is now able to offer partial coverage for Computer Corner customers who have equipment which should still be covered by the manufacturer's warranty

Our service division will not be able to offer 100% coverage, but we will be able to replace defective parts on some items which are still covered by the original manufacturer's warranty at discounted rates

Labour charges will still apply, but we are hoping to be able to offer Computer Corner customers a level of support and service unavailable to them previously.

If you have a system which was purchased from Computer Corner, and require servicing, bring your system to the Service Department at our Richmond location, or telephone us at 276-8898

Smashing Through The 8PPM Barrier

When we asked for HP LaserJet Series II compatibility, Roland listened When we asked for dual font cartridges, Roland listened When we asked for additional memory expandability, Roland listened And when we asked for a manual paper feed slot, Roland listened

Now, after listening to our requests, Roland is acting. Recently previewed at the VAR show this spring, Roland and ANO are now shipping the LP-1110 - the offspring of its highly successful LP-1100

The Raven LP 1110 is a feature rich 11 page per minute laser printer. Its advanced paper handling, multiple emulations, and font capability meet all of your business laser printing needs

Two 250 sheet paper cassettes mean less paper refilling and easy printing of large jobs An adjustable manual feed provides even more paper flexibility The LP-1110 prints on letter, legal, and A4 size paper, transparencies, labels, and envelopes

HP LaserJet Series II, dot matrix, and Diablo printer emulations ensure compatibility with today's most popular software Plus the 512KB RAM buffer is expandable to 4 5MB so as to handle complex graphics and desktop publishing jobs.

The LP 1110 produces output at 300 dots per inch (dpi) for clear, crisp text and graphics. Thirteen built-in fonts and the downloadable font capability create high quality business output There are also two font card slots to accommodate any of the 5 optional font cartridges.

Scorching speed, uncompromised compatibility, and smart looking output make the LP-1110 a must see!

Automating The GST Cont'd

cluding Canon's impressive BJ-10e, Roland's comprehensive line of dot matrix printers, and AST's award winning CUPID computer systems As well, representatives from all of the companies will be available to answer your questions and demonstrate their wares

As seating is limited, we recommend that you register early To register, or for further information, please call ANO's Western Canada Head Office at (604) 276-8898.

If you attend only one seminar this year, be sure this is the one.

We look forward to seeing you there!

PS *Don't tell the boss, but we will also be giving away some very attractive door prizes after the morning and the afternoon sessions plus there will be plenty of refreshments so you don t starve!*

DATE:	September 19, 1990
LOCATION:	Pan Pacific Hotel Pavillion "A" 999 Canada Place Vancouver, B C.
MORNING	8.30 am 12 00 pm
AFTERNOON	1 00 pm - 04 30 pm
COST	$35 00/Person

BRAVO! BRAVO! BRAVO! BRAVO!

"Out with the old and in with the new" seems to be the motto of the Intel Corporation, the largest manufacturer of PC based microprocessors in the world.

With 386 technology beginning its domination of the PC marketplace, Intel is making great efforts to move buyers into selecting its nearly two year old 386sx microprocessor, over systems running the six year old 80286 chips.

In a nutshell, the 80386sx chip is a hybrid of the 80286, that combines internal 32-bit processing with a 16-bit interface to the rest of the PC. This means that it is capable of using less expensive 286 technology, while providing 386 compatibility. New applications such as Window 3.0, Desqview/386, and a host of other 386 programs are already capable of taking advantage of the SX's capabilities.

One hardware manufacturer that's cashing in on the SX bandwagon, is AST Research with its affordable Bravo/SX personal workstation.

Where the Bravo really make its impact, other than a truly brilliant performance rating, is a host of standard features which make it irresistible. 2MB of RAM (expandable to 4MB without additional expansion boards), the powerful AST VGA Plus video adapter, serial and parallel ports built right into the system board, and an impressive 16MHz clock speed, all packed into a case which won't hog your desk space.

Priced close to most competitors 286 based systems, the Bravo also boasts AST's shining track record for award winning computer systems.

If your concerned about price, but don't want to be left out in the cold a couple of years from now, the AST Bravo/SX is for you.

ANOtations

Plus Impulse Hard Drives, featured in the August issue of ANOVATION, are now available with a two year parts and labour warranty . . . Maxtor is offering an optional 5 year parts and labour warranty on most of its line of high performance/high capacity hard disk drives . . . If your company or organization is looking for classroom space to conduct computer training and can't afford the $100/hour asked by many, give the ANO office nearest you a call for information on our affordable, fully equipped classrooms – you'll be pleasantly surprised.

Reader Response Card

Contact: ____________________

Position: ____________________

Company: ____________________

Address: ____________________

City: ____________________

Prov: ____________ Postal Code ____________

Phone: ____________ Local: ____________

Fax: ____________

Please sign me up to receive ANOVATION monthly: ☐

Please send me more information on

☐ AST Bravo/SX
☐ ANO's GST Seminar
☐ ANO Training
☐ Maxtor Hard Drives
☐ Canon BJ-10e
☐ Plus Impulse Hard Drives
☐ ANO Office Automation
☐ Roland LP-1110

ANO
OFFICE AUTOMATION

Please mail to the ANO office nearest you:

ANO RICHMOND
#110-11100 Voyageur Way
Richmond, B.C. V6X 3E1
Ph. (604) 276-8898

ANO VANCOUVER
#190-840 Howe Street
Vancouver B.C. V6Z 2M1
Ph. (604) 681-6165

ANO VANCOUVER ISLAND
#2 1026 Johnson Street
Victoria, B.C. V8V 3N6
Ph. (604) 386-2204

ANO TORONTO
Unit #1 2nd Floor
226 Esna Park Drive
Markham, ON L3R 1H3
Ph: (416) 479-1308

Other offices in:
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